

# MANUAL 2: Guidelines for Consultants

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# UNDERSTANDING GENERAL DESIGN REQUIREMENTS

Massport requires that the design be:

- ◆ cost effective
- ◆ practical
- ◆ functional

The following other general rules apply to design:

- ◆ The consultant must prepare Bid Documents according to both the executed Agreement and this manual's stipulations.
- ◆ The Consultant must request, gather and completely understand available documentation of the project's existing conditions and proposed design criteria (Exhibit 1) to ensure that the project is properly designed and constructed.
- ◆ The prime Consultant and Sub-consultants, where applicable, must certify on the design drawings, with professional registration seals and signatures, their endorsement that the design has been thoroughly checked, coordinated and prepared under the direct supervision of the person stamping the documents.
- ◆ Massport considers all original plans/tracings and specifications, including electronic files, its property.

## A. Horizontal Versus Vertical Construction

The Commonwealth of Massachusetts has two distinct construction bidding statutes:

**Horizontal Construction: MGL.c.30s.39M.** This statute governs all public construction contracts that have an estimated value exceeding \$25,000, but that do not include work associated with a building. It also governs all public construction contracts (building and non-building) that exceed \$10,000 but are less than \$25,000.

**Vertical Construction: MGL.c.149, s.44A.** This statute governs all public construction contracts associated with buildings that have an estimated value exceeding \$25,000. Consultants must have a complete working knowledge of the filed sub-bid process required by MGL c149. Furthermore, Consultants should be aware that allowances are prohibited under c.149.

At the beginning of the project, The Consultant must check with Massport's PM to find out which of the above statutes applies to the project for the preparation of the Bid Documents. Contracts of \$10,000 or less are not subject to the public bidding statutes.

## B. Applicable Building Codes and Agency Regulations

1. All applicable federal and state codes and regulations, including the State Building Code, Rules and Regulations of the Architectural Access Board, the Americans with Disabilities Act (ADA), the Massachusetts Plumbing Code, and the Massachusetts Electrical Code will govern the design, selection of materials, construction, renovation, repairs, demolition and/or removal associated with any building.

The Consultant should also refer to appropriate Massport documents, including Access Massport Guidelines for Barrier Free Facilities and Fire Protection Systems Approval and Acceptance Guidelines. (Refer to Exhibit 2 and Exhibit 20.)

2. All permanent and temporary construction must conform with the Fire Limits as noted in the Commonwealth of Massachusetts Building Code, in particular, Article 3 Logan International Airport has been designated as a Class I Fire District, excluding runway and taxiway areas. The contractor should verify the designations of all other facilities with the Massport Department of Public Safety.
3. The Consultant must have all the Department of Public Safety Inspector and the State Examiners of Plumbers Contract Documents approve all documents. The Consultant must submit one copy of these approved drawings to Massport.

If any questions of code compliance regarding electrical and plumbing work arise during the project that require the respective state and city departments to collaboratively resolve such questions, the Consultant must ensure that this coordination occurs and that the project is fully compliant with the State Building Code's applicable requirements.
4. The planning of all buildings must comply with the applicable zoning regulations and Massport's requirements.

## C. Reference Standards

The Consultant may incorporate Reference Standards into the design and Bid Documents. In doing so, the Consultant must:

- ◆ Demonstrate knowledge of the standard.
- ◆ Properly incorporate the standard.
- ◆ Monitor/enforce the standard requirements.

The Consultant should refer to Exhibit 3 for a list of Reference Standards, and, if needed, request further definition of particular standards to understand a particular project.

## D. Hazardous Materials

The Consultant must immediately notify the Massport PM when it suspects the presence of hazardous material at the project site or surrounding areas.

On any demolition or renovation project where the Consultant suspects asbestos, the Consultant must state in the Bid Documents that the General Contractor must file a Notification Form for Asbestos Removal and General Demolition/Renovation with the Commonwealth's Department of Environmental Protection (DEP) Division of Air Quality Control within 10 days before the work begins.

## **E. Energy Rebates**

The Consultant must help the Authority obtain from NSTAR any rebates for the use of energy efficient measures. The Consultant can speak with the Massport Utilities Control Manager and contact an NSTAR representative, accordingly.

## **F. Partnering**

All parties must be conscientious members of the Owner-Consultant-Construction Contractor TEAM. In recent years, Massport has come to appreciate the positive effect that early partnering (team-building) can have on enhancing the team's project understanding and interaction. For all projects over \$5 million, the Consultant should include partnering requirements in the bid documents, if Massport's PM approves of this stipulation. On smaller projects, Consultants should also consider the advantages of partnering requirements with Massport.

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# UNDERSTANDING SPECIFICATION REQUIREMENTS

## A. Division I – General Requirements

Division I - A General Requirements is a standard Massport document that applies to every project. As the cornerstone of the Construction Documents, this document specifies all of the project's administrative, procedural, and temporary facility requirements.

The Consultant must review the Division I Requirements and recommend to Massport any additions, deletions or modifications required to meet a project's specific needs. If appropriate, the Consultant must incorporate these changes into the Division II document.

## B. Division II - Special Provisions

Massport's Division II Requirements stipulate special provisions for projects. This document modifies and/or augments the Division I General Requirements. Massport will provide the Consultant with a standard Division II Requirements format. The Consultant must expand and modify this standard form, as necessary, and prepare the final Division II document. If the consultant asks, Massport will make copies of available standard specifications (i.e., Temporary Light and Power, Staging, etc.) to add into the Division II document to meet the project's specific requirements.

## C. Division III - Technical Specifications

In addition to the Division II document, the Consultant must prepare the Division III document. This document should include all of the project's required technical specifications.

Massport requires that the Consultant prepare consistent, clear specifications in the Construction Specifications Institute (CSI) format. The CSI format organizes specifications into 16 related-topic divisions. It further divides these divisions into these three sections:

- ◆ Part 1 - General
- ◆ Part 2 - Products
- ◆ Part 3 - Execution

Exhibit 4 contains the outline of a standard CSI Section.

## D. Division IV - Sample Contract Forms

Massport will provide the Consultant with a standard Division IV document. This document should contain all of the necessary sample Contract Forms.



## E. Title Page

The Consultant must ensure that the Bid Document's title page complies with Massport's format in Exhibit 5. The cover's window, which Massport will give to the Consultant, must display the project's name and identification number.

## F. Specifications Document

The Consultant must ensure that the Final Specifications are detailed, complete, and fully coordinated with the plans and drawings. The inside front cover of the contract specifications (Exhibit 6) must contain the registration seal(s) and signature(s) of the responsible design professional(s).

Final Specification originals must be clearly and legibly printed on white quality bond paper with black ink. They must also be provided in an electronic format, preferably the most up-to-date version of word processing software in use by Massport (currently Word 2000), or a compatible format. The Specification must be 8 1/2 x 11 inches in size with large enough margins to allow binding and printing on both sides of each sheet. Massport will print the Final Specifications.

## G. Filed Sub-Bid Requirements

The Consultant must completely understand the following requirements:

- ◆ Massachusetts General Laws (MGL)
- ◆ C149 Filed Sub-Bid Requirements

Filed Sub-Bids for building projects only are required for the following classes of work where the cost of the work is estimated to be more than \$10,000:

1. Roofing and Flashing
2. Metal Windows
3. Waterproofing, Damp-proofing and Caulking
4. Miscellaneous and Ornamental Iron
5. Lathing and Plastering
6. Acoustical Tile
7. Marble
8. Tile
9. Terrazzo
10. Resilient Floors
11. Glass and Glazing
12. Painting
13. Plumbing
14. Heating, Ventilating and Air Conditioning
15. Electrical Work, including direct electrical radiation for heating
16. Elevators
17. Masonry Work
18. Any other class of work for which the Consultant deems sub-bids necessary, subject to the Massport Contract Administration Manager's approval.

The Consultant must ensure that all work classes for which sub-bids must be filed have proper titles, and detail all the labor, materials and work required for that particular sub-trade. Also, the specifications section must list all of the drawings showing work for that sub-trade. Exhibit 16 provides a sample of a Filed Sub-Bid Item; Exhibit 17 explains the process for filing a sub-bid. If appropriate, the electrical, plumbing and HVAC filed sub-bid sections must clearly identify any sub-sub-trades.

## H. Performance Specifications

Performance specifications specify established criteria that Massport uses to evaluate a project. The Consultant may only prepare and employ performance specifications with Massport's prior written approval.

When developing performance specifications, the Consultant should avoid providing specific material and process descriptions that might encourage the development of new means to achieve the established result(s).

The CSI three-part section format is still applicable for performance specifications.

## I. Cross-Referencing

The Consultant must clearly and accurately cross-reference specification sections using the applicable specific section and number.

## J. Use of "Or Equal"

The Consultant must adhere to the requirements of Massachusetts General Laws, Chapter 30, Section 39M "or equal" provision. This provision stipulates in part: that "for each item of material, the specifications shall provide a minimum of three manufacturers or producers, and for the equal of any one of said named or described materials." The specification must indicate the words "or approved equal" after those places where the manufacturers' name or catalog reference specifies products or materials.

The Consultant will bear the responsibility of ensuring that the specification lists at least three equally qualified manufacturers for a service or product. All contractors must base their bids on the information provided in the specifications. For those services and products for which the specifications indicate three or more options, the contractor must choose from the options provided for such products or materials, and base its bid accordingly.

Massport will allow Proprietary Specifications to be used only when their use is beyond dispute. The Consultant must justify the use of proprietary or sole source items to Massport in written form.

## K. Material Substitution

After the General Contractor is awarded the Contract, if it wishes to use products or materials other than those specified, the General Contractor must request such use by writing to the Consultant. The request should name and describe the proposed substitutions and include associated shop drawings. The contractor should state what differences, if any, it has made in the contract price for such substitutions. When the Consultant has received complete information from the General Contractor, it must consider all aspects of the proposed substitution. Then, it must write a letter to Massport and the General Contractor recommending its approval or disapproval of the substitution. An item will be considered an "equal" substitute of the named and described item if it:

- ◆ is compatible in durability, appearance, strength and design.
- ◆ performs compatibly to the function that the general design for the work requires.
- ◆ conforms substantially, even with deviations, to the specification's detailed requirements for the item.

## L. Alternates

The Consultant's use of "alternates" in general bids will be subject to the Authority's PM's and Contract Administration Manager's approvals.

If the Consultant includes alternates in the Bid Document package, the alternates should be identified in the alternate's section(s) of the Division II - "Special Provisions." The Consultant should identify the alternates by number and explain the procedures it has established for bidding and comparing the alternates. The Consultant must also describe the changes that each alternate would require if approved. It should also list and cross-reference the divisions of specifications and drawings that each alternate would affect so Bidders can bid the job accordingly.

For building projects, the Massachusetts General Laws, Chapter 149 Section 44G will only accept alternates in ascending order. The Consultant should carefully designate the alternates and the order in which bidders should include them in the project.

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# UNDERSTANDING DRAWING/ AUTOCAD REQUIREMENTS

## A. Standards for Drawings

The Authority has the following requirements for drawings:

1. Materials/Standards: All original design drawings and record drawings must be on 3- to 4-mil-thick, double-matted Mylar. The Authority will not accept substitutes, such as sepia, sepia Mylar, vellum or cloth. Drawings must also be provided in electronic format. (See Paragraph B.1, Design Document Submittals.)
2. Size/Margins: The outside dimensions of both preliminary and final working drawings must be either 24 x 36 inches or 30 x 42 inches.
3. Within these dimensions, drawings must have a ½ -inch border on the top, bottom, and right sides, and a 1-inch border on the left side, as shown in Exhibit 7. The Authority will not accept drawings of any other size unless it has previously approved those drawings in writing. The Authority will return all inappropriate drawings to the Consultant to be redrawn according to these standards.
4. Lettering: A minimum letter size of 1/8 inch for notes and 1/4 inch for titles must be used to allow them to be reproduced in one-half of their size. All lettering must be in vertical capitals. Text font is Roman S for notes and Roman D for titles.
5. Scale: Each drawing must include graphic scales for each scale used on the drawings.
6. A/E Seal: Every sheet, including the Title Sheet, must include the applicable stamp of a Registered Professional Engineer and/or Architect licensed in the Commonwealth of Massachusetts, with the Engineer or Architect of Record's (Prime Consultant and all Sub-Consultants) signature over the seal. Both the seal and signature must be readable when reproduced. The Authority suggests that you use black indelible ink. The Authority will not accept a facsimile signature stamp.
7. Title Sheet: A Title Sheet must accompany each set of drawings, unless The Authority waives this requirement. The title sheet should contain a proper and accurate indexed list of applicable drawings. The Consultant must use mylar originals or electronic files of both sizes, which it can obtain from the Authority's Capital Program Department's Drafting Unit. Exhibit 8 presents a sample Title Sheet.
8. Title Block: The Title Block for each drawing must conform to the sample shown in Exhibit 9.
9. Legibility: Drawings must be clear and legible.

10. Drawing Revisions All drawing revisions must be identified in one of the following two ways:

- ◆ encircling the area to be clarified on the back of the drawing, and indicating the appropriate revision number.
- ◆ recording the revision number, date, and general description of the change(s) in the space provided above the title block.

11. Sequence: The numbering and sequence of project drawings will be as follows:

Title Page .....	T
Site/Civil .....	C-1, C-2, C-3 etc.
Landscaping.....	L-1, L-2, L-3, etc.
Architectural .....	A-1, A-2, A-3 etc.
Structural.....	S-1, S-2, S-3 etc.
Fire Protection.....	FP-1, FP-2, FP-3 etc.
Plumbing .....	P-1, P-2, P-3 etc.
Mechanical .....	M-1, M-2, M-3, M-4 etc.
Electrical.....	E-1, E-2, E-3 etc.

The following additional numbering rules apply:

- ◆ HVAC, Electrical and Plumbing/Fire Protection must be drawn on separate drawings.
  - ◆ Legends, graphic symbols, and general notes must appear on the first sheet of each discipline's set of drawings.
12. Prints: Drawings submitted to The Authority must be BLUE OR BLACK LINE PRINTS ON WHITE. The Authority will not accept blue prints.
13. Index: All drawing sets must include a complete index on the cover sheet that lists individual sheet titles and numbers for all disciplines in the set.
14. North Arrow: An arrow indicating North must be shown at the upper left-hand side of the drawing of all floor plans, including site/civil, architectural, structural, plumbing, fire protection, mechanical and electrical drawings.
15. Plan Views: All drawings in a set must be oriented in the same general direction.
16. Key Plan: A key plan must be shown in the lower right-hand corner of all sheets having floor plans, elevations and building sections. The plan must identify the area depicted on the sheet. The key plan orientation must be the same as the floor plan orientation on the same sheet.
17. Scales: The scale of the drawings must be shown on each plan, elevation, section and detail. The following designated scales are required as a minimum:
- |                         |                        |
|-------------------------|------------------------|
| Floor Plans             | 1/8"=1'0"              |
| Mechanical/Toilet Rooms | 1/4"=1'0"              |
| Elevations              | 1/8"=1'0"              |
| Building Sections       | 1/8"=1'0"              |
| Refl. Ceiling Plans     | 1/8"=1'0"              |
| Wall Sections           | 3/8", 1/2" or 3/4=1'0" |
| Stairs                  | 1/4"=1'0"              |
| Roof Plans              | 1/16, 1/8"=1'0"        |
18. Clearances: Mechanical Room drawings must graphically show access door swings on A/C equipment and coil filter removal clearances.

19. Building Area & Volume: Drawings must show accurate building areas and volumes to foster accurate comparisons of the project areas and volumes compatible with construction industry standards. The Authority will review the criteria to be used. Exhibit 10 presents an example of this on a drawing. A permanent record of these calculations must be filed with all project files, and the building areas must be recorded on the Architectural Drawings.

## B. Standards for AutoCAD

The Authority maintains design drawings, and Record Drawings in AutoCAD format for coordination of MPA Contracts and for interfacing with other MASSPORT AutoCAD users, e.g., GIS. These standards have been developed to assist Consultants and user's, by providing consistent data, which meets the Authority's requirements. These standards include drawing set-up, title blocks and other pertinent data.

1. Design Document Submittals: The Consultant shall submit AutoCAD files at each submission. Documents are to be submitted on CD-ROM.
2. Authority Provided Drawing Data: The Consultant shall use all the Authority provided drawings, blocks, and set up files for each Contract. If the Consultant cannot use the Authority-provided data, the Director of Capital Programs and Logan Modernization or his designee, shall approve all data development prior to initiating the drawings.

Upon completion of the contract, the Consultant shall provide, to The Authority, one (1) set of all symbols, blocks, menus, font files or any other electronic data, which was used or developed to perform the drawing tasks, which were not provided by the Authority. The Consultant shall also provide an index of all drawing file names, menus and electronic format.

## C. AutoCAD Guidelines

1. Layer List: In order to standardize layers for all record drawings, the Authority is using the "CAD Layer Guidelines", prepared by The American Institute of Architects, as it's layering convention. The exception to the above is Site/Civil layering. Site/Civil layer designations are unique to The Authority's GIS system. The Site/Civil layering list is included with the drawing setup files.

The Authority currently has separate AutoCAD layering standards for site/civil drawings. These layers are listed within the drawing named "MPA-SITE-CIVIL-LAYERS.dwg." Layers created that have additions, deletions or enhancements should be named with the appropriate prefix added to the Authority's existing site/civil layering standards. Separate text layers must also be created for any new text added to the drawing. The following is a list of prefixes:

- Y – survey information
- ASB – as-built information
- DES – design or proposed information
- DEMO – demolished information
- ABD – abandoned information
- *Existing information uses the Authority's Site/Civil/Utility layering standards without a prefix*

An index that lists and briefly describes any new layers created by the consultant that are not covered by the Authority's layering standards should be included with the first

exchange of AutoCAD drawings presented to the Authority by the consultant. Any future drawings presented to the Authority by the consultant should include an updated index of any additional layers added to the AutoCAD drawing.

2. Abbreviations: The Utility Abbreviation List was developed to standardize the use of terminology for the Utility System and the Tank Management System attribute data as well as the CAD drawings. Examples would be CB for catch basin, EMH for electrical manhole, LV for low voltage and TK for tanks. (See list at end of this section.)

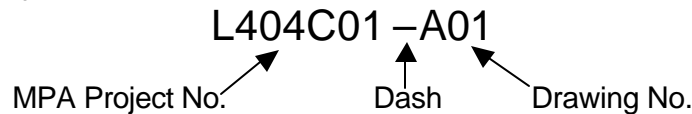
3. Electronic File Naming Format:

The naming of AutoCAD drawings and TIFF files shall be comprised of the MPA project number followed by the drawing number.

Example:

L404C01 – A01

MPA Project No.      Dash      Drawing No.



4. Drawing Setup File: The Authority will provide, on diskette, the appropriate standard drawing setup; which includes the border, title blocks, title sheet, site/civil layers and blocks. The Project Manager will designate the appropriate drawing size.
5. Color Codes: The Authority prefers, for visual review on a monitor, that all utilities be color coded in accordance with Authority site/civil layering standards.
6. Block Guidelines: The Authority uses standard engineering symbols as blocks for Record Drawings, and will provide copies of these blocks on the drawing setup file. The blocks include manholes, hydrants and other data. If the Authority does not have a particular block, the Consultant may use its symbol as the "block". However, the Consultant must provide all symbols used to create the drawings to the Authority in AutoCAD format. An index, in electronic and hard copy format, shall also be provided listing the block names and contents.
7. AutoCAD Drawing Configuration:
  - a. Model Space – All drawings are to be created in model space with true scale.
  - b. Paper Space – Plotting of drawings shall be in paper space. Insert title block and border in paper space. Paper space scale is 1 inch = 1 foot.
  - c. CTB (color dependent plot style tables) – CTB files are to be included with each drawing submission.
  - d. Site/Civil Drawing Coordinate System – AutoCAD site/civil basemaps supplied by the Authority are created in relation to its geographic location. The insert base point (0,0) can be related to a control network of other nearby sites. The horizontal control network of the basemap uses the Massachusetts Mainland State Plane Coordinate System (Zone 2001), as referenced to the North American Datum of 1983 (NAD83). The vertical component of the network is referenced to the National Geodetic Vertical Datum of 1929 (NGVD29).

Basemaps should **NEVER** be moved or rotated in a manner that removes the drawing from the control network. If the orientation of the basemap needs to be changed, the use of Paper Space with a User Coordinate System should be used to rotate the perspective of the basemaps.

Decimal units are used for all Authority site/civil/utility basemaps.

- e. Utility Data – Utility lines **SHOULD NOT** be broken for the purpose of annotation. Utility lines should run continuously from structure to structure. Lines should be annotated above or below the line.
- 8. AutoCAD Drawing Submittals: When submitting AutoCAD drawings, make certain that the following files reside within the same directory as the drawings:
  - Xrefs (external reference files) –Xrefs should only be attached and not bound to the submitted drawings.
  - CTB files (color dependent plot style tables)
  - Non-standard AutoCAD font files

Using the AutoCAD Express Tools PACK (Pack & Go) command is one way of ensuring that all the associated files for the submitted drawings are included. When using the PACK command, make sure the Preserve Subdirectories box is **NOT** checked.

## D. As-Built Record Drawings

Refer to Chapter V: Completing the Project, Section 1, Paragraph B, Submitting As-Built (Record) Drawings.



## **ABBREVIATION LIST**

<b><u>ABBREVIATIONS</u></b>	<b><u>DEFINITIONS</u></b>
A .....	ABANDONED (WITH MANHOLE TYPE) CATCH BASIN
ACB .....	ABANDONED CATCH BASIN
ACM .....	ASBESTOS CONTAINING MATERIAL
ACCM.....	ASPHALT COATED CORRUGATED METAL
ADMH .....	ABANDONED DRAIN MANHOLE
AEMH .....	ABANDONED ELECTRICAL MANHOLE
AF .....	ABANDONED FUEL LINE
AGG .....	ABANDONED GAS GATE
ALP .....	ABANDONED LIGHT POLE
ASMH .....	ABANDONED SANITARY SEWER MANHOLE
BIF .....	BIRD ISLAND FLATS
BFV .....	BUTTERFLY VALVE
BPL.....	BRASS PLATE AT DRAINAGE CLEAN-OUT
BWSC.....	BOSTON WATER & SEWER COMMISSION
C.....	COMMUNICATION
CAL .....	CALL BOX
CB.....	CATCH BASIN
CDB.....	COMBINED DUCT BANK
CEN.....	CENTRAL AREA
CF.....	COMMONWEALTH FLATS
CI.....	CAST IRON
CLAY .....	VITRIFIED CLAY PIPE
CMH .....	COMMUNICATION MANHOLE
CMP .....	CORRUGATED METAL PIPE
CNTBX .....	ELECTRICAL CONTROL BOX
CP.....	COMMONWEALTH PIER
CS.....	COMBINED SEWER (If Applicable)
CSMH .....	COMBINED SEWER MANHOLE
CSS.....	COMBINED SANITARY SEWER
CV.....	CONTROL VALVE
D.....	DRAIN

DI.....	DRAIN INVERT
DIR .....	DIRECTION OF FLOW
DM.....	DUCT MARKER
DMH .....	STORM DRAIN MANHOLE
DPW .....	DEPT. OF PUBLIC WORKS
E .....	ELECTRICAL
EBP .....	EAST BOSTON PROPERTIES
EHH .....	ELECTRICAL HAND HOLE
EMH .....	ELECTRICAL MANHOLE
ESTA.....	ELECTRICAL SUB-STATION
F .....	FUEL
FDRPT .....	MANHOLES AND JUNCTIONS ALONG FEEDER
FDRNO.....	MPA IDENTIFICATION NUMBERS FOR CABLES
FDR.....	INDEX OF CABLES BETWEEN START POINT AND END POINT (FOR REF. ONLY)
FFV.....	FUEL OIL TANK FILL VALVE
FHYD .....	FUEL HYDRANT
FM .....	SANITARY SEWER FORCE MAIN
FMGV .....	FORCE MAIN GATE VALVE
FMH.....	FUEL MANHOLE
FP .....	BOSTON FISH PIER
FPIT .....	FUEL PIT OR FUEL TEST PIT
FSP .....	FIRE STAND PIPE
FTAN .....	FUEL TANK
G.....	GAS
GD .....	GAS DRIP
GFS .....	GLYCOL FILL STATION
GG .....	GAS GATE
GM.....	GAS METER
GP .....	GAS PUMP
GOV .....	GOVERNORS ISLAND
GTV .....	GAS TEST VALVE
HAN.....	HANSCOM FIELD
HHAT .....	HIGH HAT LIGHT POLE
HMLP .....	HIGH MAST LIGHT POLE

HOO .....	HOOSAC PIER
HV .....	HIGH VOLTAGE
HYD .....	HYDRANT
LDET .....	LOOP DETECTOR
LOG .....	LOGAN AIRPORT
LP .....	LIGHT POLE
LV .....	LOW VOLTAGE
MPA .....	MASSACHUSETTS PORT AUTHORITY
N/A .....	NOT AVAILABLE
NAP .....	NORTH APRON AREA
NMS .....	NOISE MONITORING SITE (SYSTEM)
NRC .....	NO MPA RECORD CONTRACT
NSA .....	NORTH SERVICE AREA
OHU .....	OUTSIDE HEATING UNIT
OR .....	OBSERVATION RISER
ORH .....	WORCESTER
PB .....	PULL BOX
PIV .....	POST INDICATOR VALVE
POD .....	TAXIWAY LIGHT POD
RAB .....	ROADWAY ALARM BELL
RCP .....	REINFORCED CONCRETE PIPE
RED .....	REDUCER
RICWIL .....	UNDERGROUND UTILITIES (STEAM), DIRECT BURIED
RMH .....	RICWIL MANHOLE (TUNNEL HOT WATER etc.)
S .....	SEWER
SAP .....	SOUTH APRON AREA
SB .....	SOUTH BOSTON PROPERTIES
SCS .....	SURFACE CONDITION SENSOR
SMH .....	SANITARY SEWER SYSTEM MANHOLE
SPKH .....	SPRINKLER
SS .....	SANITARY SEWER
STB .....	STATE TRANSPORTATION BUILDING
STH .....	STEAM TUNNEL HATCH
SWS .....	SOUTHWEST SERVICE AREA
T .....	TELEPHONE

TCB .....	TRAFFIC CONTROL BOX
TCHH .....	TRAFFIC CONTROL SYSTEM HAND HOLE
TERM.....	TERMINAL (TERMINAL A, C etc.)
THH .....	TELEPHONE HAND HOLE
TMH.....	TELEPHONE MANHOLE
TOB.....	TOBIN BRIDGE
TRD.....	TRENCH DRAIN
TRLT .....	TRAFFIC LIGHT
TRAN.....	TRANSFORMER
TRSIG .....	TRAFFIC LIGHT SIGNAL
TSLP .....	TRAFFIC SIGNAL LIGHT POLE
TUN .....	TUNNEL
TWLP .....	TAXIWAY LIGHT POLE
UDOR.....	UNDER DRAIN OBSERVATION RISER
UP.....	UTILITY POLE
VCP .....	VITRIFIED CLAY PIPE (SEWER)
XFMR .....	ELECTRICAL TRANSFORMER
W .....	WATER
WG.....	WATER GATE
WMH .....	WATER MANHOLE
YCLT .....	YELLOW CAUTION LIGHT

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# UNDERSTANDING BIDDING INSTRUCTION AND FORMS

The Consultant must prepare Bid Proposal Documents for the bid submittal in the Massport-provided format. This format includes the following information:

- ◆ Notice to Contractors
- ◆ Instructions to Bidders
- ◆ Bid Form (Lump Sum or Unit Prices)

Exhibit 15 presents examples of the above documents. The Consultant must confirm the document format with Massport before it submits its final bid documents. Consultants must prepare Bid Documents according to the Massachusetts General Laws, either Chapter 30, S39M or Chapter 149, S 44A-F.

The Form for General Bid will normally be either: Lump Sum, which may include filed sub-bids; Unit Price; or a mix of the two.

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# UNDERSTANDING CONSTRUCTION COST ESTIMATE REQUIREMENTS

Massport requires the following details and items on cost estimates:

- ◆ The consultant must have competent and experienced estimators prepare the detailed construction cost estimates.
- ◆ Final cost estimates must bear the estimator's name(s) and the estimate's date.
- ◆ The estimator must show all escalations to actual costs separately.
- ◆ The Consultant must also provide with the cost estimate submission an estimate of the number of calendar days required to construct the project.

## A. Preliminary (Budgetary) Cost Estimates

Preliminary cost estimates must be in as much detail as is allowed in the drawings and specifications. The Consultant must provide total costs for each section of the specification.

## B. Final Cost Estimate

The Final Cost Estimate must comprehensively include:

- ◆ cost subtotals for each section of the specifications.
- ◆ a complete and detailed breakdown of materials, labor, units (sq. ft., cu. ft.), unit costs and total costs.
- ◆ total cost for labor, including all insurance, state and federal payroll taxes and any other payments to unions.
- ◆ total cost for the project, including all General Contractor and Subcontractors' overhead and profit.

## C. Format

Cost estimates must be submitted in the format shown in Exhibit 11.

## D. Submission of Cost Estimate

Cost estimates must be submitted according to the Consultant's Agreement with Massport, as discussed in Section 2. They must be submitted at the same time as all other contract Bid Documents.

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# UNDERSTANDING CONSTRUCTION SCHEDULE REQUIREMENTS

## A. Preliminary Probable Construction Schedule

The preliminary probable construction schedule must be in bar graph form that depicts the logical sequence, relationships and interrelationships of the major activities required to complete the project.

## B. Final Probable Construction Schedule

The Consultant must prepare the Probable Construction Schedule in the form of a bar graph with CPM logic depicting the logical sequence, relationship and interrelationship of the various activities, and identifying the tasks necessary to complete the project's construction. The Consultant's schedule should contain a bar for each significant activity anticipated during the construction. The major subcontracted items should be broken down into their respective major components and represented by bars.

Each bar must include a portion representing Activity Duration, including Time Allowance for Shop Drawing Approvals and Allowance for Delivery Time. All key dates, included the following, must be included:

- ◆ Project start
- ◆ Shut-down periods (if any)
- ◆ Structural steel erection duration
- ◆ Roof installation period
- ◆ Building closed in (weather-tight)
- ◆ Planting seasons

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# UNDERSTANDING FEDERAL AVIATION ADMINISTRATION (FAA) GRANT REQUIREMENTS

The Consultant must be aware that much of the anticipated airport construction is eligible for Federal Grant reimbursement from the FAA, and that all FAA requirements must be met for Massport to receive the Grants.

The Consultant must determine with the Massport PM if the project will be eligible for an FAA grant. If so, the Consultant must perform the following tasks:

- ◆ obtain and comply with all applicable FAA requirements.
- ◆ raise any questions or concerns about the requirements, and resolve them completely with Massport before writing the below-referenced letter.
- ◆ write a letter to Massport's Director of Capital Programs stating that the Consultant has reviewed the requirements, received answers to all its questions, and will conform to them.

The following bullet presents an example of a FAA Project document requirement that Consultants should adhere to when providing airport-related services:

- ◆ "AFAA will pay 100 percent of Federal share of project costs or the grant amount (whichever is less) upon satisfactory completion of the project and satisfactory submission of final documentation."

Final documentation should include a final payment application and a report containing the following information:

- ◆ An explanation of overruns and under-runs of ten percent (10%) or more.
- ◆ A certification of payment of minimum wage rates.
- ◆ A summary listing of all approved change orders.
- ◆ Material quantity certificates.
- ◆ A statement pertaining to liquidated damages, including summary of contract time, start orders, stop orders and final completion dates.
- ◆ The date that the "As Built" drawings were submitted to FAA.
- ◆ A record of final inspection (attendees and exceptions).
- ◆ A record of clearance and of exceptions.

At the end of the project, the Consultant must confirm in writing to Massport that it has complied with all of the applicable FAA requirements.



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## UNDERSTANDING ARTPORT POLICY

The Consultant must become familiar with Massport's Art Policy and consider it in the design of all Massport projects. The following paragraph describes Massport's philosophy about the incorporation of art into their projects:

***"It is the intent of ARTPORT to provide for the incorporation of quality visual art in Massport property, in order to enhance the use of Massport facilities by the traveling public, our tenants, our employees and the neighboring community. Art in Massport's spaces can enrich and humanize the environment and help Massport more effectively carry out its primary mission: to provide the best possible facilities for its user."***

When Massport requires artwork, the budget for artwork should be about one percent of the project's total construction cost.

The Consultant must meet with Massport's Project Manager (PM) to review and become totally knowledgeable of the information contained in Massport's Artport policy and its applicability to the particular project.

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# UNDERSTANDING LOGAN AIRPORT ID CARD REQUIREMENTS

When an employee or sub-consultant's work requires access to secured areas at Logan Airport, the Consultant must apply for a badge using the Application Form in Exhibit 13. Massport's approval of badges will be subject to the discretion of both the Capital Program's Program Manager and the Department of Public Safety, and the issuance of badges should not be taken for granted.

The Consultant must return all badges to Massport's PM when it completes the work, or when any employee or sub-consultant is no longer with the firm.

Massport will levee substantial fines against lost badges and violation of the SIDA areas.

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# UNDERSTANDING ADDITIONAL SERVICES

The Consultant may not perform additional services beyond the Agreement scope without the Director of Capital Programs' official written approval.

The design of each project must be divided into phases of development that Massport reviews periodically to ensure that the Consultant has achieved all of the project's goals and objectives, including all technical and functional requirements. A project's typical phases, which this section discusses, are:

- Phase One* - Design Criteria Establishment
- Phase Two* - Preliminary Design
- Phase Three* - Final Design

The Consultant Agreement will individualize submission requirements for each project, but they typically will include:

- ◆ Design Criteria
- ◆ Preliminary Design
- ◆ 30-, 60-, and 90-percent Complete Interim Documents
- ◆ Final Bid Documents.

The Agreement will also include number of sets of documents that the consultant needs to submit to Massport, which will include drawings, specifications and cost estimates as described in this section. At each submittal phase of the project, the Consultant must provide written responses to Massport's comments.

## UNDERSTANDING PROJECT DESIGN CRITERIA

The Consultant must develop Design Criteria for all major disciplines that the project requires, such as architectural, site/civil, structural, mechanical, electrical, plumbing/fire protection and all other applicable disciplines. The Consultant may also submit preliminary Design Criteria to Massport to record the Consultant's understanding of the project's design requirements.

The Preliminary Design Phase will not commence until Massport acknowledges in writing that it has received the Project Design Criteria.

As the project proceeds, involved parties may revise the Design Criteria. In these cases, the Consultant must present Final Project Design Criteria during the latter stages of the Final Design Phase. Exhibit 1 provides an example of the Final Design Criteria submission for HVAC design.

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# PERFORMING PRELIMINARY DESIGN PHASE

The Consultant must perform the tasks below during the Preliminary Design Phase.

## A. Consultations with other Affected Parties

The Consultant, as the Agreement stipulates and with Massport's Project Manager's approval and direction, must meet with users, abutters, groups, agencies, Federal, state, local and applicable utility companies to gain input and approvals (building codes, fire codes, utility, and environmental regulations, etc.).

## B. Conditions Survey/Building Code Analysis/ Handicap Access

As part of the Preliminary Design Submission, the Consultant must prepare and submit a bound document containing the requirements described below:

### 1. Conditions Survey

The Conditions Survey, if the Agreement requires it, will describe and verify the existing site/civil, subsurface/geotechnical, architectural, structural, mechanical, electrical, plumbing and fire protection, and elements of all other applicable disciplines at the project site and/or in the subject building pertinent to the specific project.

The Consultant should refer to the enclosed guideline form on Exhibit 14 to see an example of a written account of the Conditions Survey results. The results are by no means all-inclusive, so Massport encourages the Consultant to add to the survey any additional, relevant, project design information.

In each situation, the Consultant must describe the following:

- ◆ all of its observations, including potential problems with their possible causes
- ◆ all unique features
- ◆ other special items.

Photographs may accompany the form to visually refer all notations to the reader. The photographs and form must be cross-referenced in a user-friendly format.

The Consultant, if the Agreement requires, must perform additional surveys and field tests to provide specific existing site and/or building conditions. Before commencing with any additional testing or outside services, the Consultant must receive Massport's approval.

The Consultant must immediately notify Massport's Project Manager of any situations affecting the public's safety.

## **2. Building Code Analysis**

The Consultant must perform an early analysis of applicable Building Code requirements for the project. The Consultant must carefully determine the appropriate reviewing authorities and restrictive codes. The Consultant must include the complete written analysis, with any reviewing authority comments, in this submission and in the project files for record-keeping purposes.

The Building Code Analysis determines which Building Code requirements apply to the project, including handicap access requirements.

This document must include at least the following information:

- ◆ Analysis of Massachusetts State Building Code requirements
- ◆ Analysis of applicable NFPA requirements, particularly those relating to life safety and fire protection
- ◆ Energy Conservation and Sustainable Design Analysis

For each Building Code item, the Consultant must:

- ◆ record the corresponding Building Code reference(s) (page and section).
- ◆ determine the classification or violation.
- ◆ list possible alternatives to remedy problem areas.

## **3. Handicap Access**

The Authority's policy is to efficiently provide handicap access to the public and its employees. The Consultant must request a copy of "Access Massport Guidelines for Barrier Free Facilities" from the Project Manager, be completely familiar with all applicable access codes for implementation of this policy, and address at least the following in the Preliminary Design Submittal:

- ◆ A floor plan indicating normal and emergency egress paths of travel.
- ◆ A floor plan indicating both ingress and egress ADA paths of travel, highlighting points of ADA-specific construction features, such as curb cuts, accessible toilet rooms, accessible elevators, etc.
- ◆ Analysis of applicable ADA, MAAB and Access Massport requirements.

## **C. Analysis of Major Systems**

The Consultant must perform and submit a detailed analysis of all major systems and/or building components that are proposed for the project. The following is a partial list of systems and/or components that Massport requires the Consultant to analyze:

- ◆ Geotechnical
- ◆ Foundations
- ◆ Utilities (water, sewerage, drainage)
- ◆ Environmental (wetlands)
- ◆ Contaminated Materials
- ◆ Transportation, Traffic
- ◆ Site/Civil
- ◆ Architectural (provide color scheme boards on architecturally significant projects)
- ◆ Structural
- ◆ Plumbing
- ◆ Fire Protection
- ◆ Mechanical (HVAC)
- ◆ Electrical
- ◆ Security

## **D. Preparation of Schematic Drawings**

The Consultant may be required to prepare and submit schematic drawings showing the work's magnitude, scope, and character, and the essential basic elements (site/civil, geotechnical, architectural, structural, plumbing, fire protection, mechanical, electrical, transportation, traffic, environmental and all other applicable disciplines).

## **E. Outline Specifications**

The Consultant must prepare and submit outline specifications for the proposed project that consist of a comprehensive description of the following:

- ◆ scope of the project
- ◆ the major systems
- ◆ equipment
- ◆ materials (including major components)

The Consultant must have a preliminary analysis performed and the necessary backup (e.g., cost/benefit analysis, technical data, cost comparison) to support the recommended systems, structure, equipment and/or materials.

Massport does not require the Consultant to submit a detailed description of the materials, workmanship procedures or warranties in this submittal.

The Consultant must discuss the bid format, e.g., lump sum or unit price, with Massport's Project Manager.

## **F. Preliminary Constructability Review**

The Consultant must prepare and submit to Massport a report entitled "Preliminary Constructability Review" with the Preliminary Design submission(s).

This report must analyze the feasibility of construction, including the following information:

- ◆ constraints of the work site, laydown and mobilization areas

- ◆ cost effectiveness and function of the proposed system(s)
- ◆ projected labor or material shortages
- ◆ sole source or proprietary items
- ◆ long lead time items
- ◆ Massport's ongoing operations
- ◆ convenience to the public
- ◆ safety and security of the public
- ◆ aesthetics and safety of temporary construction barriers
- ◆ proposed construction cost and schedule
- ◆ QC/QA adequacy

## **G. Preliminary Probable Construction Schedule**

The Consultant must prepare and submit a Preliminary Probable Construction Schedule as previously described in Chapter I, Section 6, Paragraph A.

This schedule must determine whether or not the time required to construct the project is consistent with Massport's project schedule requirements.

Massport requires the Consultant to provide a more detailed Probable Construction Schedule during the project's Final Design Phase.

## **H. Preliminary Probable Construction Cost Estimates**

The Consultant must prepare and submit a Preliminary Probable Construction Cost Estimate for each system or discipline, as previously described in Chapter I, Section 6, Paragraph A.

## **I. Alternates (if applicable)**

The Consultant must prepare and submit an analysis and backup for each proposed alternate, as described in Chapter I, Section 2, Paragraph L.

## **J. Energy Conservation and Sustainable Design Analysis**

The Consultant must evaluate Energy Conservation and Sustainable Design features. Then, it must include a statement to the effect that it has either evaluated and incorporated cost-effective energy conservation and sustainable design systems/features, or has excluded this effort for specific, acceptable reasons. The Consultant must maximize the energy savings and sustainable construction features by applying the most recent, proven technology, and engineering, methodology, environmental and air quality standards throughout the design. The Consultant may submit alternative proposals, if appropriate, that indicate measures it wishes to take to reduce energy consumption, and the effect the measures would have on the project's facility construction and operations costs.



## K. Revisions

Once Massport has reviewed the Preliminary Design Submission, the Consultant must revise it according to Massport's recommendations and comments.

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## PERFORMING FINAL DESIGN PHASE

Upon receiving Massport's written approval of the Preliminary Design Submission, the Consultant can proceed with the design by preparing final, appropriate contract documents for public bidding.

The Consultant must make interim submissions of Bid Documents at the 30- , 60- and 90- percent interim completion levels of the design phase for review by Massport's Project Manager, unless the Agreement omits this effort or stipulates otherwise. Unless otherwise noted, the 30-, 60- and 90- percent submittals must include the information below.

### A. Drawings

*Site/Civil Drawings* - These drawing should be identified as "L" drawings and show at least the following items:

- ◆ the location and dimensions of all existing and proposed buildings, structures and features of the project
- ◆ existing contours and finished contours; bench marks and other control elements
- ◆ items of work requiring demolition
- ◆ foundation drains
- ◆ site oil/water separators
- ◆ ground floor elevations
- ◆ utilities (new and existing)
- ◆ right-of-ways or easements
- ◆ site construction, construction contract limits
- ◆ outside drainage and disposal from land and structures
- ◆ all existing foundations, obstructions and other physical characteristics of the site which may affect the work and which the Consultant, after exercising reasonable diligence, has discovered
- ◆ all development of landscape spaces, features and elements, including, without limitation, all walks, roads, recreation areas, parking areas, retaining walls and exterior lighting
- ◆ all architectural landscaping materials and equipment must be indicated

*Architectural Drawings* - These drawings should be identified as "A" drawings and dimensioned, and should include the necessary following items:

- ◆ all planned spaces (including floor, reflected ceiling and roof plans)
- ◆ all fixed equipment and fixtures
- ◆ all permanent fixtures
- ◆ overall elevations and sections through the structure(s)

- ◆ roof details including roof drainage outlets, flashing details, pitches of roof, chimneys, vent housing and the like; including all penetrations for vents, conduits, mechanical equipment, flues, pitch pockets and curb details
- ◆ detail drawings showing construction and materials
- ◆ wall sections for all typical and all unique conditions showing construction and materials
- ◆ sections through the structure(s)
- ◆ sections through stairways and such additional sections as are needed to clearly illustrate the interior
- ◆ room finish schedules showing all windows, doors, interior of rooms, corridors, stairs and partitions
- ◆ detail sections of windows, doors, permanent fixtures, finishes and similar basic elements of the structure(s), curtain walls and exterior walls
- ◆ design and drawings of construction barriers
- ◆ location of all mechanical and electrical penetrations through walls and floors
- ◆ mechanical equipment (e.g., elevators, escalators, conveyors, cranes, etc.)
- ◆ color scheme boards on architectural projects

*Structural Drawings* - These drawings should be identified as “S” drawings and show at least the following items:

- ◆ the foundation construction, materials and details with the locations and sizes of all piles, caissons, spread footings, floating slabs, pressure injected footings as applicable
- ◆ design soil bearing pressures must be indicated on the foundation plans
- ◆ complete foundation wall elevations showing location, dimensions, and grades for all floorings, steps and wall openings
- ◆ elevations of top of structural slabs and finish floor elevations; complete dimensions for all openings, depressions, and changes in elevation of structural slabs; concrete floors relative to granolithic finish and concrete topping
- ◆ complete dimensions and schedule for all lintels, beams, joists and columns
- ◆ typical structural sections showing methods of connection, floor and roof deck selection, and the methods and locations of lateral bracing
- ◆ complete dimensions and details for all members of the superstructure and for all expansion and construction joints
- ◆ design live load for each roof and floor area
- ◆ class and 28-day strength of concrete for each portion of the structure
- ◆ boring plan, log of borings, date(s) borings were taken (bottom grades of footings, ground elevations, and slab and water elevations must be plotted on boring schedule)
- ◆ framing plans and schedules showing location, size and description of all columns, beams, joists and all other framing members
- ◆ location of all major mechanical, plumbing and electrical penetrations through walls and floors

The Structural Drawings must show all the project’s design loads, and indicate allowable live loads for all of the various floor areas requiring different allowable live loads and snow load conditions including:

- ◆ drift conditions
- ◆ horizontal loads for wind and hurricane design conditions, if applicable
- ◆ seismic loadings for earthquake conditions

- ◆ concentrated loads and penetration resistance for special equipment
- ◆ deflection loadings
- ◆ any other applicable design loads

*Plumbing Drawings* - These drawings should be identified as “P” and show the following necessary items:

- ◆ a complete operative system of storm water and sanitary piping connecting to all drains, fixtures and equipment and extending to 5 feet from the outside of the building
- ◆ a complete system of cold and hot water distribution and re-circulation piping connecting to fixtures and equipment
- ◆ insulating covering on all cold water and hot water piping and on rainwater piping and on other piping types as necessary
- ◆ hot water storage heater, including insulation, controls, relief valves, thermometer, piping connections and appurtenances
- ◆ backflow preventors in accordance with BWSC and State Plumbing Code
- ◆ wall hydrants
- ◆ all interior sleeves, wall and floor plates, brackets, hangers, inserts, expansion sleeves, fixture supports and appurtenances
- ◆ floor drains; special purpose drains to receive sanitary wastes
- ◆ shower receptors and service sink receptors
- ◆ all plumbing fixtures
- ◆ hot water circulating pumps and controls
- ◆ grease interceptors and flow controls for kitchen sinks
- ◆ traps and vents for all equipment
- ◆ control valves
- ◆ toilet room and shower room accessories
- ◆ equipment and valve name tags and/or plates
- ◆ water supply and drainage to air conditioning units and incinerating scrubber
- ◆ shut-off valves on each water service to a group of fixtures
- ◆ access panels for valves and cleanouts
- ◆ concealed air chambers on each water supply to each fixture
- ◆ water service connection
- ◆ complete operating systems for distribution of all air, gas, or vacuum requirements
- ◆ system riser diagrams
- ◆ gas and other ancillary systems
- ◆ piping, filters, controls and accessories
- ◆ temporary services
- ◆ all piping must be carefully sized and all sizes must be indicated on drawings and riser diagrams, with all directions of flow and pitch on piping

*Fire Protection Drawings* - These drawing should be identified as FP and show the following items:

- ◆ Fire Protection Drawings must provide the level of detail indicated in MPA Standard Specification Section 01050 - Record Documents and Field Engineering in Exhibit 40. The Consultant should also refer to Fire Protection Systems Approval and Acceptance Guidelines in Exhibit 20.

**Mechanical Drawings** - These drawings should be identified as HVAC drawings and show Heating, Ventilating and Air Conditioning Systems including at least the following information:

- ♦ Mechanical Engineering Drawings - These drawing should show the location, within the mechanical spaces, the type and size of the principal items of heating, ventilating, air conditioning, including fixtures and the necessary control systems and diagrammatic layouts of primary and modular destruction duct and piping systems for such equipment and fixtures, together with the types of necessary control systems. Also, heat loss and heat gain calculations of the major heating, cooling and ventilating equipment must be included in a report describing the approach for meeting the Energy Code. All directions of flow and pitch on piping, and direction of flow, volumes for duct systems must be indicated. All ductwork must be shown double line.
- ♦ Mechanical Room Layouts - These drawings should including Boiler and/or Equipment room for: boilers to steam to HW converters; refrigerator machines; pumps-HW, CW, CT, expansion tanks; storage tanks; water service; all associated piping and accessories; louvers; flues and stack controls and instrumentation; equipment removal provisions; temperature control system elements, (e.g., compressors, panels, etc.).
- ♦ Sections through Congested Spaces.
- ♦ Air Handling Units - These drawings should include FA intakes and louvers; fans and drives; filters; HW and CW coils; controls; associated ductwork.
- ♦ Piping Distribution Systems - These drawings should include the location and size of all piping systems and all valves, accessories and appurtenances.
- ♦ Cooling Tower - These drawings should include the tower location and size, and associated piping and controls.
- ♦ Equipment Piping and Duct Insulation.
- ♦ Flow Diagram - This drawing should show all the piping systems with necessary instrumentation and control systems.
- ♦ Equipment and Valve Name Tags and/or Plates.
- ♦ Schedules, Legends and Symbols - This information should accompany air handling units, fans, exhausts, diffusers, registers, pumps, etc.
- ♦ Ducts - These drawings should include all supply and return duct distribution systems with access panels, damper controls, and insulation.
- ♦ Ventilation and Exhaust Systems - These drawings should include toilets, lockers, storage and janitorial rooms; fountains with humidity control; a kitchen exhaust; and concourses.
- ♦ Radiation.
- ♦ Sleeves, Hangers, Inserts and Equipment Supports.
- ♦ Shut-off Valves and Access Panels.
- ♦ Temporary Services.
- ♦ All Large Equipment Items - These items must include sufficient servicing and/or replacement space indicated on the drawings.

**Electrical Drawings** - These drawings should be identified as “E” and show at least the following information:

- ♦ The Locations, Types and Sizes of: electrical power equipment, with estimates of total electrical load; service connections; power, lighting and signal distribution systems; typical electrical fixtures; total load; conformance to the applicable Electrical Code(s)
- ♦ Security Drawings developed with Massport’s requirements, including but not limited to plans showing location and type of proposed security devices

- ◆ Lighting Systems - The types of wiring, location, types, and sizes of all fixtures, receptacles and switch outlets; mounting heights of all fixtures; sizes and types of all lamps; sizes, types and location of all panels; branch circuit wiring; sizes of feeder conductors and conduits; all other essential special details; system riser diagrams, fixture schedules; details and method of supporting all electrical fixtures and conduits.
- ◆ Power Systems - The locations, types and methods of control of all motors, heaters, and appliances; types, sizes, and locations of all controllers; starters, thermostats and other control devices; branch circuit and control wiring; sizes, types and location of all panels; sizes of feeder conductors and conduit; all other essential special details; riser diagrams; panel board and switchboard schedules; details and methods of supporting electrical conduit.
- ◆ Signal Systems - The locations, types and sizes of all outlets and equipment for TV, telephone, sound, and public address systems; service connections; wiring diagrams; riser diagrams and all other essential details.
- ◆ Fire Alarm Systems - Drawings related to Fire Alarm Systems must provide the level of detail indicated in MPA Standard Spec. Section 01050 - Record Documents and Field Engineering (See Exhibit 40).
- ◆ Services - The locations and details of all services; metering arrangements; service switchboard diagrams and arrangement; extent of installations to be provided by power and telephone companies.
- ◆ Generator or Sub-Stations - The locations, sizes and methods of connecting and protecting all generators, transformers, exciters, motor generators, switch gear, and associated equipment; current characteristics and equipment capacities; connections by means of one line and wiring diagrams; schedules of all major items of equipment and all instruments.
- ◆ Underground Work - The locations, sizes, number and types of manholes, ducts and cables; methods of cable, support and fireproofing; duct line profile; one line diagram of connections.
- ◆ Pole Line Work - The locations, lengths, treatment and class of: poles; guying; insulators; circuit; transformers; current characteristics; protective and switching devices; lightning arresters; grounding; special structures; and diagrams.
- ◆ Street Lighting - The locations, sizes and types of all transformers, luminaires, poles, cables, ducts and manholes, details of control equipment, and connection diagrams.
- ◆ Temporary Services - All necessary wiring, switches and accessories required for the temporary light and power installation during construction.
- ◆ Security Systems - The locations, types and sizes of all outlets and equipment for security alarm systems located in, but not limited to doors, windows, hardware, roofs, fences and mechanical equipment. All security systems must be developed in coordination with Massport requirements.
- ◆ All of the above final drawings must be checked, coordinated and referenced to those drawings and specifications of other disciplines that they affect or interface with.

## **B. Contract Specifications**

The Consultant must submit Specifications in the format discussed in Chapter I, Section 2. Drawings and specifications must be cross-referenced to ensure that involved parties properly coordinate all technical provisions. Terminology used on the drawings and within the various specification sections must be consistent. All proposal items must be coordinated with the technical specifications.

Along with the specifications, the Consultant must include brochures, catalog cuts, etc., of proposed major building components and equipment, such as architectural features (floor, wall and ceiling finishes; toilet partitions and equipment; casework and other architectural

equipment; doors, windows, hardware and glass; roofing and insulation; components of exterior envelope); plumbing fixtures and accessories, HVAC and sprinkler equipment, and electrical equipment (panelboards, transformers, lighting fixtures, etc.).

Consultant shall prepare a schedule of all required submittals for the project and include it within Division III, Technical Specification, Section 01300 – Submittals and Substitutions.

## **C. Probable Construction Schedule**

As part of the 30-, 60-, and 90-percent submissions, the Consultant must prepare a Probable Construction Schedule in enough detail to substantiate that it can construct the project within the Massport-specified time. If the Consultant feels that the project cannot be constructed within such a time frame, it must submit a written notice of such to Massport's Director of Capital Programs and Logan Modernization. The project's size and/or complexity will determine the Schedule's detail and method, but, generally, it will follow the format discussed in Chapter I, Section 6, Paragraph B.

In preparing the Probable Construction Schedule, the Consultant must consider the following factors:

- ◆ trade(s) (specification section number(s)) involved in the project
- ◆ description of major items of work
- ◆ lead times (delivery time) required to secure the necessary materials and equipment
- ◆ erection/installation time
- ◆ critical path activities

The Probable Construction Schedule must be an unbiased practical evaluation of the sequence and times for the various activities. With a start date, this schedule is intended to serve Massport merely as a guide. The Bid Documents must describe the work that will be bid and executed, and the construction duration. The Bid Documents should not include the Probable Construction Schedule.

## **D. Probable Construction Cost Estimates**

The Consultant must develop detailed, itemized cost estimates based upon interim and final design documents in a format compatible with Massport's bidding requirements, such as that described in Chapter I, Section 4. The estimator must identify estimates of sub-trades and potential subcontracting opportunities for Minority Business Enterprises (MBE) and Women's Business Enterprises (WBE). The Consultant must use the latest SOMWBA listing of eligible trades and subcontractors to help it identify potential subcontracting opportunities for the project.

## **E. Final Constructability Review**

As part of the Final Design (90-percent) submission, the Consultant must conduct a Final Constructability Review to reaffirm the conclusions in the Preliminary Constructability Review Report (PCRR).

If anything has changed that would affect the PCRR results, the Consultant must notify Massport's Project Manager. The Consultant must update and reconsider all items listed in

Chapter II, Section 2, Paragraph F. A report entitled “Final Constructability Review” must be presented to Massport with the Final Design submission(s).

## **F. Updated Building Code/Handicap Access Analysis**

As part of the 30-, 60- and 90-percent submissions, the Consultant must update and refine the analysis described in Chapter II, Section 2, Paragraphs B2 and B3.

## **G. Testing and Quality Control Programs**

The Consultant may be required to develop a testing and quality control/quality assurance (QC/QA) program for various project elements as the Agreement stipulates and submit it as part of interim submissions.

## **H. Construction Barriers**

The Consultant must design the construction barriers and include them in the Interim and Final Bid Documents. Massport requires that the General Contractor construct temporary construction barriers at the onset of the project. Such temporary barriers must be located around or through work sites, and next to areas where the general public may pass through. The barriers should serve as a safety measure for the traveling public and as an aesthetically pleasing aid.

## **I. Obtaining Approvals**

Before going out to bid, the Consultant must prepare and file applications, and obtain all necessary approvals from those local, state (e.g., MA Dept. of Public Safety) and Federal authorities that the statutes and the Agreement require.

Before printing the bid documents for a building project, the Consultant will meet with the State Building Inspector and Massport’s Fire Rescue Department to secure their approvals of the plans. This step will also facilitate the General Contractor’s application for a Building Permit, and ultimately, for a Certificate of Occupancy. Also at this meeting, Consultants must submit Certification Construction Control Forms (Refer to Exhibit 19), which are signed by the respective architects and engineers who have stamped their professional seals on the construction documents.

## **J. Project Signs**

The Consultant should verify with the Project Manager if a project sign is necessary. If one is needed, the Consultant must require the General Contractor to provide it, according to the Standard Detail shown in Exhibit 12, to identify the project to the public. No information must be included on the Project Sign except that which Massport stipulates. The General Contractor must submit a scale drawing of the project sign for the Consultant’s approval before it has been fabricated.

The sign must be positioned in a site location that the Consultant has selected with Massport’s approval. The General Contractor must maintain the sign throughout the Contract and remove



and dispose of the sign when the Consultants directs it to. The Consultant must not remit a separate invoice for furnishing and maintaining the project sign.

## **K. Submission of Final Design and Bid Construction Documents, Calculations and Other Pertinent Documents**

In this phase of the project, the Consultant must usually submit the following documents:

- ◆ Specifications (originals and electronic files)
- ◆ Drawings (original mylars and electronic files)
- ◆ Final Color Scheme Boards (for architecturally significant projects)
- ◆ Two original copies
- ◆ Construction Cost Estimate
- ◆ Construction Schedule
- ◆ Final Design Criteria and Calculations
- ◆ Bidding Instructions and Forms
- ◆ Bid Schedule
- ◆ Other documents and information specified here
- ◆ Written responses to Massport 90-percent review comments

As part of the complete Bid Documents, the Consultant must include all final design calculations for the site and building systems including sewer, water and drainage systems, structural systems, HVAC, plumbing, fire protection systems and electrical systems including short circuit analysis. It must be submitted to Massport in a neatly bound indexed format with a table of contents within 30 days of submission of the Bid Documents. The Consultant must turn over all other data, information, reports, and surveys to Massport at the end of the project, as they will remain Massport's property.

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# UNDERSTANDING PRE-BID CONFERENCE REQUIREMENTS

A pre-bid conference will be scheduled for all contractors. At the conference, the Consultant must:

- ◆ Have all attendees sign in.
- ◆ Describe the project and explain Massport's expectations.
- ◆ Generate interest among Prime Contractors to ensure that Massport's project will receive maximum competition amongst bidders.
- ◆ Not distribute any Bid Documents or Addenda; all answers to inquiries from Contractors that may alter the Proposed Price can only be addressed by issuing a formal addendum.
- ◆ Advise Massport, if necessary, if any addendum is needed and what its purpose is.
- ◆ Only issue addenda to clarify further items in the Bid Documents that will affect the Proposed Price.
- ◆ Prepare Minutes of the Pre-Bid Conference and distribute to Massport and all sub-consultants.

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## ISSUING ADDENDUM

### A. General

The Consultant must issue addenda to the Bid Documents at least ten days before the receipt of any bids. The addenda should be used to revise, delete or add information to the Bid Documents that could or may give reasons for the Sub-Bidder or General Contractor to alter the Proposed Price. During the bid period, only addenda can alter the Bid Documents. The Consultant should note on the addendum and advise prospective bidders that oral interpretations and responses are not binding. The Consultant must prepare and submit all addenda for Massport's approval. Massport must issue all addenda.

### B. Criteria and Procedure

Consultants should follow these steps when writing addenda:

1. Number Addenda consecutively.
2. Express a change only once, then refer to the addendum whenever necessary. One expressed correction should serve for all repetitive changes.
3. Make sure that potential bidders receive the addendum in time to prepare their bids so that the bid opening is not delayed.
4. Change the bid specifications by indicating an item designation, the page and the paragraph where the modification is to be made. Follow the use of "delete" by the word(s), line(s), paragraph(s) or page to be changed, followed by the word "insert," which should precede the modification.
5. Understand that making changes on the Contract Drawings entails giving *an item designation and the drawing number*.
6. Reissue entire drawings as part of an addendum.

### C. Format

Addendum items should be arranged in the same sequence as the Bid Documents. The basic elements of an addendum are:

- ◆ Addendum Number
- ◆ Massport Project Identification Number and Title
- ◆ Date
- ◆ Changes to the Proposal
- ◆ Changes to the Specifications

Exhibit 18 presents an example of an Addendum.

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## PERFORMING BID REVIEW/GENERAL CONTRACTOR RECOMMENDATION

The Consultant must attend the bid openings for all sub-bids and the general bid. The Consultant must help Massport evaluate bids, sub-bids and alternates. It should recommend to Massport, with appropriate justification, which firm should be awarded the job, and which firms should not.

The Consultant must include, in its recommendation, its evaluation of the proposed General Contractor's previous work performance.

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# AWARDING THE CONSTRUCTION CONTRACT

Massport must execute the required contract forms and issue a Notice to Proceed. Massport will provide the Consultant with copies of this Notice and an executed Construction Contract.

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# PERFORMING CONSULTANT SERVICES DURING CONSTRUCTION

The Agreement between Massport and the Consultant will stipulate several construction phase services that the Consultant must perform on the project. This section provides some examples of such services. At the end of the project, the Consultant must certify (Exhibits 19 and 20) to Massport's Department of Public Safety that the professional construction phase services have been performed during construction.

## A. Partnering

If Massport's Project Manager approves of it, the Consultant must arrange with the General Contractor (GC) immediately after the contract is awarded, a Partnering Seminar, which is intended to enhance the participants' project understanding and interaction. The owner (Massport) and the GC will generally share the costs of this seminar. Costs typically include the hiring of a professional partnering facilitator, the rental of an off-site conference location and refreshments/lunch.

## B. Pre-Construction Conference

The Pre-Construction Conference will be held to establish the lines of communication among all project participants and to set the tone for the project's Construction Phase. The Consultant must work with Massport's Project Manager and the GC to schedule and conduct a Pre-Construction Conference with the:

- ◆ Sub-Consultants
- ◆ General Contractor (GC)
- ◆ Sub-Contractor(s)
- ◆ Resident Engineer (RE)/Inspector
- ◆ Facility Personnel
- ◆ Fire Department, Public Safety, Compliance Department and Risk Management Department Representatives

The Consultant must help Massport's Project Manager detail the design specifics, budget, schedule, and other items of note for the meeting. Exhibit 21 provides the Consultant with Massport's suggested Pre-Construction Conference Agenda. The Consultant must prepare meeting minutes that list all meeting attendees and discussion items, and send them to Massport's Project Manager and all attendees for information and action.

## C. Schedule Review and Approval

### 1. Initial Review

The Consultant must thoroughly review the GC's initial construction schedule within one week of its submission, to ensure that it is logical and stipulates a project completion time within the Contract time limits. This schedule and later schedules may serve to resolve disputes during the project, such as delay claims. The Consultant must reject or approve the initial schedule and inform in writing, both the GC and Massport, of its action.

### 2. Periodic Reviews

The Consultant must review, at least monthly, the GC's construction schedule to:

- ◆ determine if the work is progressing on schedule.
- ◆ verify the integrity of critical sequencing relationships.
- ◆ ascertain the cumulative effect on the schedule of all adjustments and changes to work already incorporated in the Construction Contract.

The Consultant must approve or reject the GC's submitted schedule in writing to the GC. The GC must respond to the Consultant's schedule comments by revising the schedule accordingly and resubmitting it to the Consultant with its submission of Pay Requisitions. The Consultant must expedite the review of the updated construction schedules with the Pay Requisitions.

### 3. Two-Week Schedule

At the weekly job meeting, the GC must present its two-week "look ahead" schedule. This schedule should include details of what it intends to do during the next fourteen days, and when it will do it. The GC should view the two-week schedule as its work commitment to the Consultant and Massport. The Consultant and Massport will review the schedule and offer the GC constructive comments, if warranted, to be added to the schedule. The Consultant and Massport will coordinate and adjust their activities accordingly so that each can perform its respective review efficiently to achieve the classic "win, win, win" outcome. If the GC is performing the job on Massport property, it must be especially sensitive to the several hundred thousand people who travel through Massport each day. If the job is not on Massport property, the GC must work with an appreciation of Massport's serious concern for its public image, which demands that the GC honor its commitment to perform certain tasks at certain times.

## D. Payment Schedule Review

The Consultant must review the GC's Payment Schedule and Schedule of Values to ensure that they are reasonable and consistent with the approved Construction Schedule as described in Paragraph C.3, above. If the Consultant is satisfied with the Payment Schedule and the Schedule of Values, it must recommend that Massport's Project Manager approve of it. The Consultant's and Massport's approvals are necessary before the Consultant will endorse and process the GC's initial Payment Requisition according to the Payment Schedule.

## E. Shop Drawing Review

Massport considers shop drawings a major control factor in the approval of construction work. Shop drawing review provides the Consultant with the opportunity to carefully review the essential elements of the works. Massport will ensure that the shop drawings comply with the contract documents and are coordinated with associated items of work.

The Consultant and the GC must collaboratively ensure that each submission is received early enough to allow review and approval before the work begins, and to accommodate construction progress.

The responsible designer familiar with the work and other related disciplines' personnel responsible for associated items of work must review shop drawings. Shop drawings that a sub-consultant reviews must bear both its and the Consultant's approval stamps. Shop drawings must usually be returned to the GC within one week, although sometimes the Agreement allows two weeks for their return. The Consultant must maintain a central file of all shop drawings, including a detailed record of each submission's date, the date of the approval or disapproval, and the date that they were transmitted to the GC. The RE must maintain a second shop drawing file at the job site.

The Consultant should follow the guidelines below in reviewing shop drawings:

- 1) Receive shop drawings and maintain a Shop Drawing Log in a format similar to that shown in Exhibit 22.
- 2) Review shop drawings, take appropriate action, (use stamp, as in Exhibit 23) and return them to the GC expeditiously. The turnaround time for shop drawing review cannot exceed two weeks. Require resubmission, if necessary.
- 3) Verify that the lead designer of each major discipline actually checked their shop drawings in detail.
- 4) Verify that the GC has checked and noted its approval of the shop drawings.
- 5) Obtain required, properly certified laboratory and test reports, and review them.
- 6) Issue detailed or supplemental drawings as required.
- 7) Confer with the Facility Representative and Massport's Project Manager before approving the suggested choice of items, i.e., choice of colors, types of carpets, brands of tiles, etc.

Exhibit 23 provides the Consultant with a copy of a shop drawing stamp that could be used by the Consultant to designate the appropriate action required as a result of the shop drawing review.

**NOTE:**

- 1) The text below the action boxes of the stamp emphasizes the GC's responsibility for all shop drawings.
- 2) The Consultant should check off the block entitled "NOTED - No Action Required" if it does not need to review or approve of the shop drawings.

## **F. Weekly Job Meetings**

The Consultant must arrange and conduct weekly or biweekly job meetings to achieve two goals:

- ◆ To monitor the progress and quality of the work, per the Contract.
- ◆ To assist in coordinating construction and Massport operational activities.

The Consultant must also visit the job site before the weekly job meeting and as much as needed, but no less frequently than once each week to:



- ◆ observe the progress of the construction.
- ◆ uncover and resolve construction difficulties, without removing the responsibility from the GC.
- ◆ to become satisfied with the quality of the work.

The Consultant must bring a copy of the project plans and specifications to each job meeting. It must also make sure that the meeting minutes record information that attendees discuss on project progress and cost, such as potential change orders, schedule delays, and unusual job conditions.

Within five days of the meeting, the Consultant or a designee must prepare, sign and, with Massport Project Manager's approval, distribute typed meeting minutes (possible format - Exhibit 24) to all attendees and other designated recipients. The distribution should contain a statement to the effect that, "If no objections or corrections to the report are received within seven days, the report will be considered a true and fair accounting of the meeting."

## **G. Federal Aviation Administration**

As mentioned earlier, Massport may be eligible to receive FAA grant money if the project can meet all of its reimbursement requirements. The Consultant must know and understand these FAA requirements. On projects that are eligible for FAA reimbursement, the Consultant must submit to Massport, with the contractor's Payment Requisition, one of the forms entitled, "Breakout Of Eligible and Ineligible Costs for the FAA Grant" in Exhibits 25 for unit price, and 26, for lump sum contracts. By doing this, parties needing a tally of eligible and ineligible costs will have it readily available.

Exhibit 27 provides a sample time sheet that Massport in-house REs, Surveyors and Quality Assurance Specialist on Airport Improvements Projects (AIP) potentially eligible for FAA reimbursement may use to record their work hours.

## **H. Payment Requisitions**

According to Chapter 30 Section 39K of the Massachusetts General Laws, the Consultant must review and certify that the GC's monthly (Exhibit 28) and final (Exhibit 29) payment requisitions are valid. The Consultant must also make sure that the Contractor's monthly update of the project schedule, quantities, equipment usage, as-built drawings of the horizontal and vertical locations of project elements, payroll compliance with federal and state wage rates, and other requirements are also valid. Based on its observations and knowledge, the Consultant should consider these certifications as concrete indicators to Massport of its endorsement that:

- ◆ The Contractor has progressed the work to the indicated point.
- ◆ The Contractor has performed the work according to the Contract Documents.
- ◆ The Contractor is entitled to payment of the certified amount.

Chapter IV, Section 2, Paragraph B.11 further discusses Massport's final payment requisition certification requirements. Massport must expeditiously process payment requisitions because there is a fifteen-day statutory limit between the receipt of a valid requisition and the actual remittance of the payment to the GC, after which the GC may seek interest payments from Massport.

# I. Changes

## 1. Background

All participants in a construction project must try to minimize changes. If a change is needed, any member of the project team, (i.e., the GC, the Consultant (A/E) or Massport) can initiate a Change Order Proposal (COP).

## 2. Change Order Proposals

A COP typically involves work that has been added or deleted, and has time and money implications. After the three parties involved fully understand the work of the Change Order, the GC must prepare and submit a COP to the Consultant. This COP must include a quoted price for the change showing the quantities and unit prices or lump sum, broken down in enough detail so that all parties can understand the total COP price components. Massport recognizes two methods of pricing the COP cost:

- ◆ *Lump Sum.* Massport and the GC usually prefer this method of Change Order because it defines the price up front, providing an opportunity for the GC to maximize its profit by efficiently performing the work.
- ◆ *Time and Materials.* Massport and the GC use the T&M Change Order if they cannot reach an agreement. This method may be used for any number of reasons, but most often, it is used because the parties cannot clearly define the extent of the work.

The Consultant, the RE and Massport's Project Manager should review the COP right after receiving it to more easily and intelligently analyze the GC's quotation, to keep the project on schedule, and to maintain relationships. The Consultant must keep a record of COPs on the Change Order Proposal Summary Report shown in Exhibit 30, which shows the current financial status of the project.

Before evaluating the GC's COP, the Consultant with the RE must independently estimate the costs, credits and time resulting from the COP. The Consultant must use its independent estimate to evaluate the GC's COP and to reconcile any cost, credit or time differences. The Consultant should discuss its evaluation with and receive guidance from Massport's Project Manager to negotiate a fair and reasonable CO with the GC. After the Consultant and the GC reach an agreement, the Consultant should submit the CO to Massport's Project Manager for approval. If an agreement between the parties cannot be reached, Massport may have the GC perform the extra work on a time and materials (T&M) or a "force account" basis, or may elect to have another contractor perform the additional work. Exhibit 32 provides a convenient worksheet for calculating the value of extra T&M work.

Before approving a COP to authorize extra work or delete work, the Consultant and Massport's Project Manager must systematically weigh the COP's impact on life cycle costs and time against its tangible and intangible benefits. The Consultant must never authorize the GC to proceed with any change without first obtaining Massport's Project Manager's approval.

If approved, the Consultant must prepare a formal Agreement for Change Order, as shown on Exhibit 31. The Change Order may include one or several COPs. The GC, the Consultant and the Project Manager sign the Agreement for Change Order. The Agreement for Change Order must include a letter from the Consultant that summarizes the CO and recommends an appropriate action.

## J. Requests for Information, Interpretation of the Contract Documents, and Other Requirements

During the project, the GC and subcontractors may have questions about various technical issues. The GC may use the Request for Information (RFI) form to submit formally such questions to the Consultant. The Consultant is obligated to respond quickly, in writing, to such formally submitted questions, depending on the urgency of the request. The Consultant must send such responses to the GC, Massport's Project Manager and the RE. The Consultant must track all RFIs in a spreadsheet or database format and discuss the RFI status with participants at the weekly job meetings.

At the GC's or Massport's request, the Consultant may be required to:

- ◆ interpret and render, sometimes in writing, decisions on the requirements of the contract documents.
- ◆ instruct the GC and subcontractors on behalf of Massport and prepare supplementary drawings or instructions needed to accomplish the work of the contract documents.
- ◆ help the GC prepare Change Orders for Massport's approval and execution.
- ◆ help Massport resolve any disputes and claims that occur with the contractors.

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# PROVIDING RESIDENT ENGINEER/INSPECTION SERVICES

## A. Work Site Presence

Massport recognizes the importance of having an Owner representative at the work site. Massport generally employs any of the following three means to ensure that RE inspection services are provided:

- ◆ It has the Consultant provide the Resident Engineering Services.
- ◆ It provides an in-house, Massport Resident Engineer (RE).
- ◆ It provides an RE through a separate Consultant.

If Massport contracts with the Consultant to provide Resident Engineering Services, the Consultant must perform the scope of the services that the Agreement between Massport and the Consultant stipulates. The following paragraphs describe many tasks that Massport expects a RE/Inspector to perform.

## B. RE/Inspector Tasks

This section describes many, but not all, of the RE/Inspector's tasks that may be required during the construction phase.

### 1. Daily Log

The RE must keep a daily log to record the inspector's understanding of what the GC and subcontractors have accomplished every day of the project. The daily log should note the following information:

- ◆ the work that has been done
- ◆ the equipment that is used and not used
- ◆ unusual things that have occurred at the site during the day
- ◆ extra work and changes that have occurred
- ◆ people who have visited the site
- ◆ the weather on the work day
- ◆ other project-related information that occurred on that day

Massport's log has two components:

- a. The Daily Progress Report (Exhibit 33). This report, which the RE should submit to the Project Manager every week, indicates contractors' activities, work forces on site, hours worked, weather, equipment, time, tests, materials used, occurrences, etc.

- b. The RE's Diary. This report, which the RE should keep in a bound book, describes the work that the GC and the subcontractors accomplish during the day and other information including:

- ◆ potential changes and claims
- ◆ extra work that was done
- ◆ test results
- ◆ any factors that did delay or could delay the progress of the work
- ◆ job site accidents
- ◆ visitors at the job site
- ◆ the RE's work hours
- ◆ any unusual occurrences

The Consultant or responsible party must deliver the RE's Diary to Massport's Project Manager when the project is completed.

## **2. Job Meeting Participation**

Realizing that job meetings are an essential part of successful construction, Massport requires that all projects have weekly job meetings at the active construction sites. Typical job meetings are attended by several representatives from each essential party such as the GC, the Consultant and Massport. The RE plays a pivotal role in these meetings, sometimes as the meeting facilitator. REs will explain to meeting attendees their observations about the previous week's construction site activities, their thoughts on the proposed two-week schedule and their beliefs as to what may occur in the future. The Consultant, or sometimes the RE, prepares the job-meeting minutes.

## **3. Monthly Construction Progress Report**

The RE must prepare the Monthly Construction Progress Report shown in Exhibit 34, which summarizes the following information:

- ◆ major work accomplished during the last month
- ◆ the status of the project compared to the schedule
- ◆ the change orders status, from both monetary and time aspects.

The RE should attach a copy of both the Contractor's updated schedule and its monthly requisition to this report.

## **4. Quantity Pay Books**

The RE must maintain an orderly and complete Quantity Book, detailing the calculation of quantities for all payment items. The Consultant should deliver the Quantity Pay Book to Massport's Project Manager when the project is completed.

## **5. Shop Drawings**

The RE should keep a Shop Drawing Log similar to Exhibit 22. The RE should help the Consultant process the shop drawings, samples and test results, and follow up with the Consultant to ensure that they are turned around within two weeks.

The RE should review all the scheduling documents that the GC prepares and submits, and should comment on their acceptability to the Consultant.

## 6. Quality Assurance

The RE should monitor the GC's Quality Control Program. The RE observes the work to determine whether or not:

- ◆ the Contractor has performed it according to the contract documents
- ◆ the work needs to be corrected or rejected
- ◆ special testing or inspection is required. If Quality Assurance (QA) tests are required, a separate QA Lab, as appropriate, must perform them.

The RE should report any quality concerns immediately to the Massport Project Manager, the Massport Quality Assurance Specialist and the Consultant.

## 7. Site, Material, Equipment and System Testing

The RE should verify that all tests are performed according to the contract documents and that the responsible parties are keeping proper records and reporting test results.

## 8. Change Orders

The RE should help the Consultant prepare all change orders, including documentation of actual construction costs for time and material work as provided under Article 23 and 80 in Division I, General Requirements and Covenants of the Contract Documents. The RE should maintain copies of the Change Order Proposal Summaries, Exhibit 30.

## 9. Contract Deviations

The RE should prepare the Contract Deviation Report in Exhibit 35 to advise Massport of any changes that have been made to the contract drawings or specifications during construction. Massport and the Consultant use this feedback to ensure that the design of future projects incorporate the necessary changes and refinements.

## 10. Compliance Reporting

Attached at Exhibit 36 are four reports to be submitted to the Massport Compliance Department by construction contractors working for Massport:

- ◆ The WEEKLY Certified Payroll Report (and Statement of Compliance) must be submitted each week by both the General Contractor and all subcontractors (including trucking firms), regardless of tier, no later than the week following the week worked. The original is to be submitted to the Authority's Compliance Department and a copy to the Authority's Consultant or Resident Engineer. The Consultant must check that the DBE subcontractors have actually performed the work (dollar amount and trade) that the Contract requires.
- ◆ The Contractor's WEEKLY Workforce Utilization Report must be submitted each week by both the GC and all subcontractors, regardless of tier, no later than the week following the week worked.
- ◆ The QUARTERLY Projected Workforce Table must be submitted by both the GC and all subcontractors one week prior to the start of work and one week prior to the start of each quarter thereafter.
- ◆ Subcontractors shall forward reports to the GC. It is the responsibility of the GC to ensure the accuracy and completeness of all reports prior to submitting them to the Authority. Only the reporting forms provided in the contract document will be accepted by the Authority. All other reporting forms will be returned to the GC for proper resubmittal.

- ◆ The Disadvantaged Business Enterprise (DBE) Quarterly Expenditure Report MUST be submitted by the GC within two (2) weeks following the end of each quarter. Note the due dates on the reporting form.

## **11. Payment Requisitions**

The RE must review and process all the GC's payment requisitions before submitting them to the Consultant and then Massport's Project Manager (Refer to Exhibits 28 and 29). The approval process for each requisition may require the RE and the GC to hold one or more working sessions to reach an agreement on the payment amount. Payment approval is contingent upon the GC's adherence to all contract documentation requirements, including the following items:

- ◆ doing quality work per the contract
- ◆ keeping As-Built Drawings updated and current
- ◆ maintaining payroll compliance and reporting
- ◆ paying subcontractors
- ◆ maintaining manpower compliance and reporting
- ◆ submitting certificates of product compliance
- ◆ submitting test results/reports
- ◆ submitting an updated project schedule
- ◆ adhering to the Schedule of Values

The Consultant must, on FAA Grant-eligible projects, fill out the appropriate Breakout Form in Exhibit 25 or 26, which breaks out eligible and ineligible costs, and attach it to the requisition. The Consultant must also insure that the Force Account Time Sheet in Exhibit 27 is collected weekly, if grant eligible, so that Massport may recoup the in-house MPA Survey, Inspection and QA personnel costs.

## **12. Project Photographs**

The RE must select appropriate project subject matter and photograph it to document the project's evolution. The RE must take some photographs, 35mm slides or digital photos monthly, from the same location, looking in the same direction. The RE must maintain a working camera (35mm or digital) at the site and must be prepared to take unscheduled photographs relative to the volume and importance of the construction activities. The photographs should highlight all unique activities and conditions such as unforeseen site conditions that may or may not lead to extra work. If the RE uses a 35mm camera, the images should be converted to a Massport-confirmed digital format and delivered to Massport on a photo CD. The photographs must be identified as shown in Exhibit 37.

## **13. Coordination with Facility Representatives**

The RE must ensure that all major aspects of construction are fully coordinated in a timely manner with the Facility Representative and that the Contractor is continuously informing the Engineer of the project's progress, construction schedules and plans, and any changes to the work. The Consultant should also verify that the Facility Representative is fully satisfied with the GC's efforts to mitigate all negative impacts to the traveling public and Massport.

## **14. Coordination with City and State Agencies**

The RE should ensure that the GC has all the necessary permits and that the contractor is properly and effectively coordinating all the construction work with all applicable City, State and Federal Agencies.

## 15. Job Site Project Records

The RE must maintain complete and orderly job site records, including the following information:

- ◆ the contract documents
- ◆ the Daily Log with interpretations
- ◆ verbal instructions given to the GC
- ◆ any occurrence or work that might result in a claim for a change in contract sum or contract time
- ◆ payment and wage rate records
- ◆ material slips and Certifications
- ◆ RFIs and RFI Log
- ◆ construction photographs
- ◆ Change Order Proposals and Change Orders
- ◆ the Contractor's library of guarantees, certificates, maintenance and operation manuals and all other appropriate records

## 16. As-Built Drawings

The RE should verify weekly that the GC is maintaining a current set of documents according to Authority's requirements of MPA Standard Specification Section 01050 entitled "Record Documents and Field Engineering." The Consultant and the RE must coordinate the submission and processing of As-Built Drawings for the project, and may not forward the monthly pay requisition until the Contractor's As-Built Drawings have been updated to current status.



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# Completing The Project

As a project approaches completion, there are many discrete actions that must be completed. To assist in that regard, a Construction Project Closeout Flowchart and Checklist are at Exhibits 38 and 39.

## A. Starting the Closeout

When a construction contract starts to wind down, the Consultant encourages the GC to review the Contract and all the Work that has been done. The GC then prepares a list of outstanding work, i.e., work still remaining to be completed, and gives that list to the Consultant and the Resident Engineer. This is the beginning of the inspection process discussed later in this section.

## B. Submitting As-Built (Record) Drawings

### 1. Purpose

Record drawings provide an enduring record of what was actually constructed, and where exactly it is located, both horizontally and vertically. The Consultant must incorporate into the record drawings all the changes that were made during construction so that future work may be designed and built without encountering any unforeseen situations. See Exhibit 40. There are many requirements for the GC in this exhibit and elsewhere in this Section 5, "Completing the Project." The Consultant must ensure that the Contract specifications clearly state these requirements.

### 2. Procedure

The General Contractor must update As-Built drawings as the job progresses. It must maintain one complete master set of contract drawings in the field office that records all Addenda, Change Orders, Field Orders and other such changes.

Before the Authority endorses the work as "complete," the Contractor must submit to the Consultant all of the Contractor-prepared As-Built Prints. Each As-Built Print must include a Contractor-signed certification statement that confirms the completeness and accuracy of as-built conditions. The Consultant then updates the As-Built Drawings as follows: 4-mil Mylar drawings and electronic AutoCAD files, along with scanned 200 dbi TIFF files of As-Built Mylar drawings. Each As-Built Mylar Drawing must also include a Contractor-signed certification statement that confirms the completeness and accuracy of documented as-built conditions. Such statement shall read: "This Drawing reflects As-Built Conditions as certified by (insert contractor's name) ." The Consultant then delivers to the Authority the certified As-Built Drawings.

## C. Receiving Approval from Compliance

Every contract has Minority Business Enterprise (MBE) goals. By submitting their monthly reports to the Massport Compliance Department, the GCs show the progress they have made toward meeting those goals. As the job is nearing completion, the Consultant verifies that the

GC has, in fact, met its DBE goals, or taken reasonable steps to try to meet them by receiving from the GC, a copy of a letter/memo from the Massport Compliance Department approving the GC's MBE performance.

## **D. Performing Preliminary Inspection**

The Consultant, with the RE and the Massport Facility representative(s), must conduct a Preliminary Inspection of the facility. This inspection should identify substantive issues of concern that must be addressed before the facility's occupancy can be considered and punch-lists can be prepared. The Consultant must report the results of this Preliminary Inspection to both the General Contractor and Massport's PM.

## **E. Preparing and Working Off the Punch List**

Once the GC has brought the project to a high level of completeness and corrected a majority of the obvious deficiencies, the Consultant and the RE will conduct a thorough inspection of the entire project. All necessary corrective work and work to be completed, will be identified as a Punch List.

The Consultant must include a corresponding dollar value for each missing or incomplete item, and withhold this value from the General Contractor according to the Consultant Contract - Articles 1.5.5-1.5.8. This Punch List will be submitted to the GC. The GC will organize the Punch List work by discipline and distribute it to the affected subcontractors. The GC will schedule and manage the Punch List work in an organized and timely manner to bring the project to the level of substantial completion.

## **F. Achieving Substantial Completion**

A newly constructed or renovated facility reaches substantial completion, sometimes called beneficial occupancy, when it is considered available for full occupancy and total active operation. When the GC feels it has reached substantial completion, which includes the completion of all final testing and the submission of all required test reports, the GC will provide written notice to the Consultant. The Consultant will then conduct an inspection with all the sub-consultants of record to verify the completeness of the work and the adherence to the State Building Code. The Consultant will then prepare affidavits to that effect and give the GC a "Certificate of Substantial Completion," Exhibit 41.

## **G. Obtaining Certificate of Occupancy**

Immediately after the project is determined to be substantially complete, the GC, in conjunction with the Engineer, must obtain from the State Building Inspector a Certificate of Occupancy. Prerequisites to obtaining the Certificate of Occupancy include approvals (sign-offs) from the electrical, plumbing and elevator inspectors, as appropriate. The Consultant must also obtain any permits needed from the General Contractor to operate special apparatus.

## **H. Obtaining Operation and Maintenance Manuals**

The Consultant, in coordination with the GC, establishes a detailed training program for Massport personnel to ensure that the physical plant and the equipment that is constructed or installed for the project will be properly operated and maintained. The Consultant must ensure that the GC's Operations And Maintenance (O&M) Manuals and the manufacturer's representatives' equipment O&M Manuals are instructive and comprehensive enough to guide Massport personnel and answer any O&M questions. The Consultant must review the Authority's requirements of MPA Standard Specification Section 01730 entitled "Operation, Maintenance and Warranty Manuals," and include them as appropriate and as shown in Exhibit 42.

## I. Providing Guarantees and Warranties

The following guidelines apply to guarantees and warranties:

- ◆ The Consultant must ensure that the GC maintains a Warranty Log as shown in Exhibit 43 and provides a copy of it to the RE and Consultant as the Contractor receives or installs guarantee/warranty items.
- ◆ The Consultant must ensure that it or the GC delivers the final Warranty Log to Massport when the construction is completed.
- ◆ The Consultant must provide Guarantees/Warranties for all products and equipment that is purchased (and/or pre-purchased by Massport) and installed under the Construction Contract.
- ◆ The Consultant must also provide Massport with the following warranty review services:
- ◆ Consult with Massport during the warranty periods and recommend alternatives concerning inadequate performance of materials, systems and equipment under warranty.
- ◆ Inspect materials, systems and equipment several months before the warranty expires (e.g., at the 10- month point for a one-year warranty) to determine its adequacy of performance.
- ◆ Document defects or deficiencies, and help Massport administer the General Contractor's effort to perform corrective measures.

## J. Providing Attic Materials

The Consultant works with the GC to ensure that extra materials, spare parts (e.g., filters and fuses) assembly instructions, etc., for future maintenance, are provided to Massport.

## K. Returning Security Badges and Apron Permits

The Consultant verifies that for Airfield projects, the GC has returned to Massport all security badges and apron permits.

## L. Returning Communications Equipment

The Consultant ensures that the GC has returned to Massport all borrowed communications equipment. Also, the Consultant verifies that all communications equipment purchased for the Contract and designated to become Massport property at the completion of the Contract, has been turned over to the RE.

## M. Cleaning up the Work Site

Before Massport will process the final payment requisition, the GC must clean up the work site, haul routes and the construction staging area. This includes removing, at the GC's own expense, all emergency structures and all surplus material and rubbish that has accumulated during the Work. The Consultant ensures that this is done.

## N. Performing Final Inspection

Once the GC has satisfactorily completed all punch-list items, the Consultant must arrange the final inspection date with Massport's Facility Representative, Massport's PM, the General Contractor, and the RE/Inspector. These individuals should together conduct the project's Final Inspection and confirm that they are all completely satisfied with the project's construction.

The Consultant must then confirm that all work, including Change Orders, has been completed according to the contract requirements.

The Consultant must also confirm that the General Contractor has made all its required payments, including wages to subcontractors, suppliers, etc., and that it has no known outstanding claims to pay.

Contingent upon completely satisfying the contract requirements, the Consultant must complete a "Certificate of Final Inspection, Release and Acceptance" (Exhibit 44), have all designated parties sign it and distribute it accordingly.

## **O. Approving Final Payment, Requisition, Certification and Release**

The Consultant must review the General Contractor's Final Payment Requisition (Exhibit 29) with the Release of Liens and Consent of Surety (if any), and verify that the Contractor has met all Construction Contract requirements. The Consultant can approve the Contractor's final payment requisition only after all of the project completion items in this section have been completed.

## **P. Completing the General Contractor Evaluation**

The Consultant with Massport must evaluate the General Contractor at the end of the project. The Consultant must fill out the Evaluation Form in Exhibit 45 and certify on it that the evaluation, to the best of its knowledge, truly represents the General Contractor's performance. This evaluation must be filled out for all Mechanical, Electrical, Plumbing, and Fire Protection subcontractors. The appropriate sub-consultant(s) must complete an Evaluation Form for each of their respective subcontractors and submit them to the Consultant.

## **Q. Submitting the Master Project File – Schedule of Deliverables**

All projects, regardless of size or complexity, require a Master Project File. This file provides in one location a current and complete computerized record so that persons may easily retrieve information.

The file must be separated into two sections:

- ◆ Preliminary and Final Design
- ◆ Construction

All Master Project Files must contain at least the below-listed, categorized information. When construction of the project is complete, the Consultant must submit its Master Project File to Massport.

### **1. Design**

- a. Record of all design changes
- b. All project correspondence in chronological order; on larger projects, separate correspondence by discipline or functional area, such as Meeting Minutes, submissions, telephone conversations, general correspondence, etc.
- c. Record of all Massport and other agencies' approvals
- d. Design calculations for each discipline submitted within 30 days after the Bid Documents are submitted
- e. Final Design Criteria
- f. Bid Phase Information:
  - ◆ Pre-Bid Conference Minutes

- ◆ Bid Tabulation (Listing of bidders and itemization of each bid)
- ◆ Bid Review, Recommendation, Award and Notice to Proceed

## 2. Construction

- a. A copy of the specifications, construction contract and itemized bid list
- b. Pre-construction conference and all job meeting minutes
- c. Change Order Proposals, Change Orders and the Change Order Log
- d. Telephone conversation summaries
- e. Daily Logs (including Resident's Diary and original reports covering the entire project, and the monthly construction progress report)
- f. Project Inspection Reports and related items
- g. Quantity Pay Book
- h. Shop drawings including a Shop Drawing Log, submissions and responses
- i. Testing Agency (Quality Assurance) Reports and Material Certifications
- j. Miscellaneous project correspondence
- k. Contract Deviation Reports
- l. Weekly Workforce Utilization Reports
- m. Certified Payroll Reports
- n. Payment Requisitions
- o. Project photographs
- p. Operations and Maintenance Manuals
- q. Certificate of Occupancy
- r. As-Built Record Drawings

## 3. Contract Documents

- a. Plans, original drawings, and specifications, including any addendum.

## R. Providing Post-Construction Evaluation

The Agreement may require the Consultant to provide post-construction evaluation services. These services consist of a project inspection by all major A/E disciplines about ten months after the construction is completed. The inspection/visit would include:

- ◆ a project tour
- ◆ interviews with appropriate supervisory, operation and maintenance personnel
- ◆ analysis of operating costs and related data for evaluation of:
  1. the intent of the project versus actual use,
  2. the functional effectiveness of planned spaces,
  3. the operational effectiveness of systems and materials,
  4. the efficiency of the design and construction delivery process, and
  5. the operating condition of all guaranteed and warranted equipment and items.

## S. Providing Feedback to Massport

Massport would sincerely appreciate any constructive feedback that the Consultant has about the way that Massport influenced the job at any stage. Massport has found lessons learned from Consultants to be most helpful and wants to listen and learn what measures it can take to further facilitate future jobs. Massport asks Consultants to kindly provide any helpful, constructive feedback to the Massport PM, the Director of Capital Programs and Logan Modernization or the Deputy Director for Construction and Engineering Services.

# Sample Design Criteria

## Heating, Ventilating and Air Conditioning

### *PART 1 - DESIGN CRITERIA*

#### 1.1 General

- A. This document reflects Massport's needs and requirements for the facility to be built in project location. The Consultant must use this document as the basis of the HVAC design in the design of the systems.
- B. Construction documents and all construction must strictly comply with rules, regulations, standards, codes, ordinances and laws of local, state, and federal governments and other authorities with lawful jurisdiction. The documents and construction must also comply with Massachusetts State Energy Code.

#### 1.2 Site

- A. Location
- B. Latitude: 42/N
- C. Elevation: 225 ft. (MLW)

#### 1.3 Outside Design Conditions (Based On Lawrence, Ma Ashrae Conditions)

- A. Winter: ODB (97-1/2%)
- B. Summer: 90DB/73WB
- C. Summer Condensing: 95DB ambient (air cooled equipment)
- D. Summer Evaporating: 78WB ambient (water cooled equipment)

#### 1.4 Inside Design Conditions

##### A. Winter

- 1. Office occupancy areas: 72DB $\pm$ 2DB
- 2. Mechanical/Electrical (unoccupied) areas: 65DB
- 3. Computer Room: 72/F $\pm$ 2DB; 50%RH $\pm$ 5%

##### B. Summer

- 1. Office occupancy areas: 72DB $\pm$ 2DB; 50%RH $\pm$ 5%
- 2. Mechanical/Electrical (unoccupied) areas: ventilation only
- 3. Computer Room: 72/F $\pm$ 2DB; 50%RH $\pm$ 5%

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C. Outside Air Ventilation

1. Based on ASHRAE values: 10 cfm/person or 15% total supply air, minimum

D. Electric Power (for load calculations)

See "Power Requirement Summary" Electrical Section, Fig. E-1

E. Population

1. Office areas: 200 sq. ft./person

1.5 Building Envelope

A. Roof

1. U-factor: 0.07 btu/hr/sq. ft/F

B. Walls/Fenestration

1. OTTV  $\leq$  34.2 btu/hr/sq. ft. of exterior wall

C. Floor

1. Perimeter insulation: R = 5.5, min.

D. All valves are as directed in Massachusetts State Building Code, Article 20.

1.6 Supply Air Temperature

A. Cooling

1. Diffuser outlet = 55/F; +0m -2 DB

B. Heating

1. Diffuser outlet = 85/F; +2, -0 DB

# General MPA Jurisdictional Requirements

The Massachusetts Port Authority is a public instrumentality, performing an essential governmental function, and is not subject to the supervision or regulation of any state agency, except as may be specifically provided by statute. It does not pay taxes, although it makes in-lieu-of-tax payments to Chelsea, Boston and Winthrop.

As an Authority of the Commonwealth, Massport is not subject to direction or control by any municipality.

A significant Opinion of the Attorney General in 1979 concluded that Authorities including Massport with responsibilities not limited to a single town are not subject to local regulation. Like the state, Massport is subject to the state Department of Public Safety for review of plans and specs, building permits and certificates of occupancy.

The Board of Examiners of Plumbers now has authority to approve plans, inspect plumbing and issue permits on Massport projects, consistent with the State Plumbing Code.

Jurisdiction of electrical inspections shall be verified with the Project Manager.

Although Massport is not bound by municipal by-laws or regulations and is not subject to direction from municipal officials except as above noted, requests or issues of a substantive nature that may be directed to the consultant or contractor on a Massport project by local officials should be brought to the attention of the Director of Capital Programs. Massport may wish to examine the possible worthiness of the local officials' position, and may choose to carry out what is being proposed.



## Reference Standards

ASA	Acoustical Society of America 500 Sunnyside Blvd. Woodbury, NY 11797
ASC	Adhesive and Sealant Council 1627 K Street, NW, Suite 1000 Washington. DC 20006
ARI	Air-Conditioning and Refrigeration Institute 1501 Wilson Blvd., 6th Floor Arlington, VA 22209-2403
ACCA	Air Conditioning Contractors of America Sixteenth St. Washington, DC 20036
ADC	Air Diffusion Council One Illinois Center, Suite 200 111 East Wacker Drive Chicago, IL 60601
AMCA	Air Movement and Control Association, Inc. 30 West University Drive Arlington Heights, IL 60004
AMCA	Air Movement and Control Association 30 West University Drive Arlington Heights, IL 60004
AA	Aluminum Association 900 19th St., NW, Suite 300 Washington. DC 20006
AAMA	American Architectural Manufacturers Association 1540 East Dundee Road, Suite 310 Palatine, IL 60067-8321
AAN	American Association of Nurserymen 1250 Eye St., NW, Suite 500 Washington, DC 20005

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AASHTO	American Association of State Highway and Transportation Officials 444 North Capitol Street, Suite 225 Washington, DC 20001
AATCC	American Association of Textile Chemists and Colorists P.O. Box 12215 Research Triangle Park, NC 27709
ABMA	American Boiler Manufacturers Association 950 North Glebe Road, Suite 160 Arlington, VA 22203-1824
ACI	American Concrete Institute Box 19150 Detroit, MI 48219
ACPA	American Concrete Pipe Association 8300 Boone Boulevard, Suite 400 Vienna, VA 22182
ACGIH	American Conference of Governmental Industrial Hygienists 6500 Glenway Avenue, Bldg. D-7 Cincinnati, OH 45211-4438
ACO;	American Council of Independent Laboratories 1725 K St., NW Washington, DC 20006
AGA	American Gas Association 1515 Wilson Blvd. Arlington, VA 22209
AGAL	American Gas Association Laboratories 8501 East Pleasant Valley Rd. Cleveland, OH 44131
AGMA	American Gear Manufacturer's Association 1500 King Street, Suite 201 Alexandria, VA 22314
AHA	American Hardboard Association 520 N. Hicks Rd. Palatine, IL 60067

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AIHA	American Industrial Hygiene Association 345 White Pond Dr. Akron, OH 44320
AIA	American Institute of Architects 1735 New York Avenue, N.W. Washington, DC 20006
AISC	American Institute of Steel Construction One East Wacker Dr., Suite 3100 Chicago, IL 60611
AITC	American Institute of Timber Construction 11818 E. Mill Plain Blvd Vancouver, WA 98684
AIA	American Insurance Association 1130 Connecticut Ave., NW Washington, DC 20036
AISI	American Iron and Steel Institute 113 Fifteenth St., NW Washington, DC 20036
ALSC	American Lumber Standards Committee P.O. Box 210 Germantown, MD 20874
ANSI	American National Standards Institute 1430 Broadway New York, NY 10018
APA	American Parquet Association 2900 First Commercial Building Little Rock, AZ 72201
API	American Petroleum Institute 1220 L St., NW Washington, DC 20005
APA	American Plywood Association Box 11700 Tacoma, WA 98411

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APHA	American Public Health Association 1015 Fifteenth Street, N.W. Washington, DC 20005
AREA	American Railway Engineering Association 50 F St., NW, Suite 7702 Washington, DC 20001
ASCE	American Society of Civil Engineers 345 East 47th Street New York, NY 10017
ASHRAE	American Society of Heating, Refrigerating & Air Conditioning Eng. 1791 Tullie Circle, N.E. Atlanta, GA 30329
ASME	American Society of Mechanical Engineers 345 East 47th Street New York, NY 10017
ASNT	American Society for Non-Destructive Testing 4153 Arlingate Plaza Columbus, OH 43228-0518
ASPE	American Society of Plumbing Engineers 3617 Thousand Oaks Blvd., Suite 210 Westlake, CA 91362
ASSE	American Society of Sanitary Engineering P.O. Box 40362 Bay Village, OH 44140
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103
ASPA	American Sod Producers Association 4415 West Harrison Street Hillside, IL 60162
AT&A	American Telephone and Telegraph Company 26 Parsippany Rd. Whippany, NJ 07981

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AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235
AWS	American Welding Society 550 LeJeune Road, N.W. Miami, FL 33135
AWPA	American Wood-Preservers' Association PO Box 849 Stevensville, MD 21666
AWPB	American Wood Preservers Bureau PO Box 5283 Springfield, VA 22150
AFBMA	Anti-Friction Bearing Manufacturers Association 1101 Connecticut Ave., N.W., Suite 700 Washington, DC 20036
AWI	Architectural Woodwork Institute 2310 S. Walter Reed Drive Arlington, VA 22206
ASM	ASM International Materials Park, OH 44073
AABC	Associated Air Balance Council 1518 K St., NW, Suite 503 Washington, DC 20005
AGC	Associated General Contractors of America 1957 E. Street, N.W. Washington, DC 20006
ALI	Associated Laboratories 500 S. Vermont St. Palatine, IL 60067
AEIC	Association of Edison Illuminating Companies 600 No. 18th St. Birmingham, AL 35291-0992
AHAM	Association of Home Appliance Manufacturers 20 N. Wacker Drive Chicago, IL 60606

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AOAC	Association of Official Analytical Chemists 2200 Wilson Blvd., Suite 400 Arlington, VA 22201-3301
AOSA	Association of Official Seed Analysis Box 19281 Springfield, IL 62794
AI	Asphalt Institute Research Park Drive P.O. Box 14052 Lexington, KY 40512-4052
ARMA	Asphalt Roofing Manufacturers Association 6288 Montrose Road Rockville, MD 20852
AWI	Architectural Woodwork Institute 23 10 South Walter Reed Drive Arlington, VA 22206
BELLCORE	Bellcore 60 New England Ave. Piscataway, NJ 08854
BANC	Brick Association of North Carolina P.O. Box 13290 Greensboro, NC 27415-3290
BIA	Brick Institute of America 11490 Commerce Park Dr., Suite 308 Reston, VA 22091
BHMA	Builders' Hardware Manufacturers Association 355 Lexington Ave., 17th Floor New York, NY 10017
BOCA	Building Officials & Code Administrators International, Inc. 4051 West Flossmoor Road Country Club Hills, IL 60478-5795
BSI	Building Systems Institute 1300 Summer Ave. Cleveland, OH 44115-2851

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BOR	Bureau of Reclamation PO Box 25007 Denver, CO 80225
BIFMA	Business and Institutional Furniture Manufacturers Association 2335 Burton St., SE Grand Rapids, MI 49506
CDT	California Department of Transportation 1900 Royal Oaks Dr. Sacramento, CA 95815
CRA	California Redwood Association 405 Enfrente Ave., Suite 200 Novato, CA 94949
CRI	Carpet and Rug Institute PO Box 2048 Dalton, GA 30722
CISPI	Cast Iron Soil Pipe Installation 5959 Shallowford Road, Suite 419 Chattanooga, TN 37421
CISCA	Ceiling and Interior Systems Construction Association 104 Wilmot Road, Suite 201 Deerfield, IL 60015-5195
CDC	Centers for Disease Control 1600 Clifton Road, N.E. Atlanta, GA 11601
CTI	Ceramic Tile Institute of America 700 N. Virgil Ave. Los Angeles, CA 90029
CBM	Certified Ballast Manufacturers Association 1422 Euclid Ave. Cleveland, OH 44115
CLFMI	Chain Link Fence Manufacturers Institute 1101 Connecticut Avenue, N.W. Washington, DC 20036

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CI	Chlorine Institute 2001 L St., NW Washington, DC 20036
CFR	Code of Federal Regulations Government Printing Office Washington, DC 20402
CAUS	Color Association of the United States 343 Lexington Ave. New York, NY 10016
CID	Commercial Item Descriptions 700 Robbins Ave. Philadelphia, PA 19111-5094
CIE	Commission Internationale De L'Eclairage 7 Pond St. Salem, MA 01970
CAGI	Compressed Air and Gas Institute 1230 Keith Building Cleveland, OH 44115
CGA	Compressed Gas Association 1235 Jefferson Davis Highway Arlington, VA 22202
CRSI	Concrete Reinforcing Steel Institute 933 No. Plum Grove Rd. Schaumburg, IL 60173-4758
CEMA	Conveyor Equipment Manufacturers Association 932 Hungerford Dr., #36 Rockville, MD 20852
CTI	Cooling Tower Institute P.O. Box 73383 Houston, TX 77273
CDA	Copper Development Association Box 1840, Greenwich Office Park 2 Greenwich, CT 06836
COE	Corps of Engineers 3909 Halls Ferry Rd. Vicksburgh, MS 39180-6199



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CMAA	Crane Manufacturer's Association of America 8720 Red Oak Blvd, Suite 201 Charlotte, NC 28217
DLPA	Decorative Laminate Products Assoc. 600 S. Federal St., Suite 400 Chicago, IL 60605
DCA	Defense Communications Agency 2800 Eastern Blvd. Baltimore, MD 21220
DISA	Defense Information Systems Agency A Street and So. Courthouse Rd. Arlington, VA 22204-2199
DIA	Defense Intelligence Agency 4600 Silver Hill Washington, DC 20389-5000
DLA	Defense Logistics Agency Cameron Station Alexandria, VA 22304
DOA	Department of Agriculture PO Box 2890 Washington, DC 20590
DOC	Department of Commerce 5285 Port Royal Road Springfield, VA 22161
DOD	Department of Defense 5801 Tabor Ave Philadelphia, PA 19120-5099
HUD	Department of Housing and Urban Development 451 7th Street, SW Washington, DC 20410
SD	Department of State SA-6, Room 804 Washington, DC 20522-0602

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DOT	Department of Transportation 400 Seventh St., S.W. Washington, DC 20590-0001
DCAPB	District of Columbia Air Pollution Board 2100 Martin Luther King Jr., Avenue, S.E. Washington, DC 20020
DCDOT	District of Columbia Department of Transportation 2000 14th Street, N.W. Washington, DC 20009
DCECD	District Of Columbia Environment Control Division 2100 Martin Luther King Jr., Avenue, S.E. Washington, DC 20020
DHI	Door and Hardware Institute 14170 Newbrook Drive Chantilly, VA 22021-2223
DIPRA	Ductile Iron Pipe Research Association 245 Riverchase Parkway East Suite O Birmingham, AL 35244
EIA	Electronic Industries Association P.O. Box 19539 Irvine, CA 92713-9539
EJCDC	Engineers' Joint Contract Documents Committee American Consulting Engineers Council 1015 15th Street, N.W. Washington, DC 20005
EPA	Environmental Protection Agency 401 M St. Washington, DC 20460
ETL	ETL Testing Laboratories Industrial Park Route 11 Courtland, NY 13045
ECSA	Exchange Carriers Standards 5430 Grosvenor Lane, Suite 200 Bethesda, MD 20814

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EJMA	Expansion Joint Manufacturers Assoc. 25 North Broadway Tarrytown, NY 10591
EIMA	Exterior Insulation Manufacturers Assoc. 30 Holley St. Wakefield, RI 02879
FTI	Facing Tile Institute P.O. Box 8880 Canton, OH 44711
FM	Factory Mutual Engineering and Research Corporation 1151 Boston-Providence Turnpike Norwood, MA 02062
FAA	Federal Aviation Administration Government Printing Office Washington, DC 20402-9371
FCC	Federal Communications Commission Government Printing Office Washington, DC 20402-9371
FGCC	Federal Geodetic Control Committee 174 Rockwell Bldg., Room 24 NOAA Rockville, MD 20852
FHWA	Federal Highway Administration 400 Seventh St., SW Washington, DC 20590-0411
FS	Federal Specifications 700 Robbins Avenue Philadelphia, PA 19111-5094
FED-STD	Federal Standards 700 Robbins Avenue Philadelphia, PA 19111-5094
FTM-STD	Federal Test Method Standards 700 Robbins Avenue Philadelphia, PA 19111-5094

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FGMA	Flat Glass Marketing Association 3310 Harrison White Lakes Professional Building Topeka, KS 6661
FCI	Fluid Controls Institute P.O. Box 9036 Morristown, NJ 07960
FORSER	Forest Service Department of Agriculture Engineering P.O. Box 996090 Washington, DC 20090-96060
FCCCHR	Foundation for Cross-Connection Control & Hydraulic Research KAP-200 University Park MC-2531 Los Angeles, CA 90089-2531
GAMA	Gas Appliance Manufacturers Association 1901 North Moore Street, Suite 1100 Arlington, VA 22209
GSA	General Services Administration Crystal Mall 4, Room 403 Washington, DC 20406
GIS	Germany Institute For Standardization 2805 McGaw Ave. Irvine, CA 92714
GA	Gypsum Association 810 First St., NW, Suite 510 Washington, DC 20002
HMA	Hardwood Manufacturers Assoc. 2831 Airways Blvd., Suite 205, Bldg. B Memphis, TN 38132
HPMA	Hardwood Plywood Manufacturers Association P.O. Box 2789 Reston, VA 22090-2789
HOSHS	Hawaii Occupational Safety and Health Standards 830 Punchbowl Street Honolulu, HI 96813

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HEI	Heat Exchange Institute 1300 Summer Avenue Cleveland, OH 44115-2851
HMI	Hoist Manufacturers Institute 8720 Red Oak Blvd., Suite 201 Charlotte, NC 28217
HPW	H.P. White Laboratory 3114 Scarboro Rd. Street, MD 21154
HI	Hydraulic Institute 9 Sylvan Way, Suite 180 Parsippany, NJ 07054-3802
HYI	Hydronics Institute 35 Russo Place Berkeley Heights, NJ 07922
ILI	Indiana Limestone Institute of America Stone City Bank Building, Suite 400 Bedford, IN 47421
IRI	Industrial Risk Insurers 85 Woodland Street Hartford, CT 06102
IES	Illuminating Engineering Society of North America 345 East 47th Street New York, NY 10017
IFI	Industrial Fasteners Institute 1717 East 9th Street Cleveland, OH 44114
IGCI	Industrial Gas Cleaning Institute, Inc 1707 "L" Street Washington D.C. 20036
ISA	Instrument Society of America P.O. Box 3561 Durham, NC 27702
ICEA	Insulated Cable Engineers Association, Inc. P.O. Box 440 South Yarmouth, MA 02664

IGCC	Insulating Gas Certification Council c/o ETL Testing Laboratories, Inc. P.O. Box 2042 Route 11, Industrial Park Cortland, NY 13045
IBD	Institute of Business Designers 341 Merchandise Mart Chicago, IL 60654
ICAC	Institute of Clean Air Companies 1707 L Street, NW, Suite 570 Washington D.C. 20036-4201
IEEE	Institute of Electrical and Electronics Engineers, Inc. 345 East 47th Street New York, NY 10017
IPC	Institute for Interconnecting and Packaging Electronic Circuits 7380 N. Lincoln Ave. Lincolnwood, IL 60646
ISA	Instrument Society of America 67 Alexander Dr. P.O. Box 12277 Research Triangle Park, NC 27709
IAPMO	International Association of Plumbing and Mechanical Officials 20001 Walnut Dr., South Walnut, CA 91789-2825
ICBO	International Conference of Building Officials 5360 S. Workman Mill Road Whittier, CA 90601
IETA	International Electrical Testing Association 221 Red Rocks Vista Drive P.O. Box 687 Morrison, CO 80465
IEC	International Electrotechnical Commission (Available from ANSI) 1430 Broadway New York, NY 10018

IIAR	International Institute of Ammonia Refrigeration 1101 Connecticut Ave., NW, Suite 700 Washington D.C. 20036
IMSA	International Municipal Signal Association P.O. Box 539 Newark, NJ 14513
ISO	International Organization for Standardization American National Standards Institute 1430 Broadway New York, NY 10018
ISSA	International Slurry Surfacing Association 1101 Connecticut Ave., N.W., Suite 700 Dept. 4033 Washington D.C. 20036
CCITT	International Telegraph & Telephone Consultative Committee U.S. Dept. Of Commerce National Technical Information Service 585 Port Royal Rd. Springfield, VA 22161
IEEE	Institute of Electrical and Electronics Engineers 345 East 47th Street New York, NY 10017
IMIAC	International Masonry Industry All-Weather Council International Masonry Institute 815 15th Street, N.W. Washington, DC 20005
MFMA	Maple Flooring Manufacturers Association 60 Revere Drive, Suite 500 Northbrook, IL 60062
ISS	Iron and Steel Society 410 Commonwealth Dr. Warrendale, PA 15086-7512
KCMA	Kitchen Cabinet Manufacturers Association 1899 Preston White Dr. Reston VA 22091-4326

LIA	Lead Industries Association, Inc. 292 Madison Ave. New York, NY 10017
LPI	Lighting Protection Institute P.O. Box 1029 Woodstock, IL 60098
L.H. Bailey Hortorium LHBH	MacMillian Publishing Co. Hortus Third Attn: Order Dept. 100 Front Street Riverside, NJ 08075
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry 127 Park Street, NE Vienna, VA 22180
MFMA	Maple Flooring Manufacturers Association 60 Revere Dr., Suite 500 Northbrook, IL 60062
MIA	Marble Institute of America 3305 State Street Farmington MI 48335
MDOE	Maryland Dept. Of the Environment Air Management Administration 25 Broening Highway Baltimore, MD 21224
MSHA	Maryland State Highway Administration 707 North Calvert Street Baltimore, MD 21202
MHI	Material Handling Institute 8720 Red Oak Blvd., Suite 201 Charlotte, NC 28217
MCAA	Mechanical Contractors Association of America 1385 Piccard Dr. Rockville, MD 20832



MBMA	Metal building Manufacturers Association c/o Charles M. Stockinger Thomas Associates 1230 Keith Building Cleveland, OH 44115
ML/SFA	Metal Lath/Steel Framing Association 600 South Federal Street Suite 400 Chicago, IL 60605
MICA	Midwest Insulation Contractors Association 2017 So. 139th Cir. Omaha, NB 68144
MIL-HDBK	Military Handbooks Standardization Documents Order Desk Bldg. 4D 700 Robins Ave. Philadelphia, PA 19111-5094
MS	Military Specification Sheet ATTN: Cataloging Building 4D NPN-DODSSP 700 Robbins Ave. Philadelphia, PA 19111-5094 or
GSA	General Services Administration (GSA) Specification & Consumer Information Distribution Section (WFSLS) 7th & "D" Street, S.W., Room 6654 Washington D.C. 20407
MIL	Military Specification Naval Publications and Forms Center 5801 Tabor Avenue Philadelphia, PA 19120
MIL-STD	Military Standards Defense Printing Service (DPS) ATTN: Cataloging Building 4D NPN-DODSSP 700 Robbins Ave. Philadelphia, PA 19111-5094

NAPA	National Asphalt Pavement Association Calvert Building, Suite 620 6811 Kenilworth Ave. Riverdale, MD 20737
NAAMM	National Association of Architectural Metal Manufactures 600 S Federal St., Suite 400 Chicago, IL 60601
NACE	National Association of Corrosion Engineers P.O. Box 218340 Houston, TX 77218-8340
NAGDM	National Association of Garage Door Manufacturers 1300 Sumner Ave. Cleveland, OH 44115
NAPHCC	National Association of Plumbing-Heating-Cooling Contractors P.O. Box 6808 Falls Church, VA 22046
NBBPVI	National Board of Boiler and Pressure Vessel Inspectors 1055 Crupper Ave. Columbus, OH 43229
NBGQA	National Building Granite Quarries Association P.O. Box 482 Barre, VT 05641
NCTA	National Cable Television Association 1724 Massachusetts Ave., N.W. Washington D.C. 20036-1969
NCMA	National Concrete Masonry Association P.O. Box 781 Herndon, VA 22070
NCRPM	National Council on Radiation Protection and Measurements 7910 Woodmont Ave., Suite 800 Bethesda, MD 20814
NECA	National Electrical Contractors Association 7315 Wisconsin Ave. Bethesda, MD 20814

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NEMA	National Electrical Manufacturers Association 2101 L Street, NW Washington D.C. 20037
NEII	National Elevator Industry, Inc. 185 Bridge Plaza, North Fort Lce, NJ 07024
NEBB	National Environmental Balancing Bureau 8224 Old Courthouse Road Vienna, VA 22180
NFPA	National Fire Protection Association Battery March Park Quincy, MA 02269
NFLPA	National Fluid Power Association 3333 No. Mayfair Rd. Milwaukee, W1 53222
NFPA	National Forest Products Association 1250 Connecticut Ave., NW, Suite 200 Washington D.C. 20036
NHLA	National Hardwood Lumber Association P.O. Box 34518 Memphis, TN 38184
NLGA	National Lumber Grades Authority 1055 W. Hastings St., Suite 260 Vancouver, British Columbia Canada V6E 2E9
NIOSH	National Institute for Occupational Safety & Health 200 Independence Ave., SW Washington D.C. 20201
NIJ	National Institute of Justice 1600 Research Blvd. Rockville, MD 20850
NIST	National Institute of Standards and Technology Publications and Programs Inquiries Room E128, Administration Building Gaithersburg, MD 20899

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NLA	National Lime Association 3601 No. Fairfax Dr. Arlington, VA 22201
NOFMA	National Oak Flooring Manufacturers Assoc. P.O. Box 3009 Memphis, TN 38173-0009
NPCA	National Paint and Coatings Association 1500 Rhode Island Ave., NW Washington D.C. 20005
NPA	National Particleboard Association 18928 Premiere Court Gaithersburg, MD 20879
NRMCA	National Ready-Mixed Concrete Association 900 Spring Street Silver Spring, MD 20910
NRCA	National Roofing Contractors Association O'Hare International Center 10255 West Higgins Rd., Suite 600 Rosemont, IL 60018-5607
NSF	National Sanitation Foundation 3475 Plymouth Rd. P.O. Box 1468 Ann Arbor, MI 48106
NSSEA	National School Supply and Equipment Assoc. 2020 Fourteenth St. North, Suite 400 Arlington, VA 22201
NSWMA	National Solid Wastes Management Association 1730 Rhode Island Ave., N.W Washington, DC 20036
NSF	NSF International 3475 Plymouth Rd. Ann Arbor, MI 48105
NTMA	National Terrazzo and Mosaic Association 3166 Des Plaines Avenue Des Plaines, IL 60018

NWMA	National Wood Window Manufacturers Assoc. 1400 East Touhy Ave., Suite G-54 Des Plaines, IL 60018
NCEL	Naval Civil Engineering Laboratory Code L34 Port Hueneme, CA 93043-5003
NEESA	Naval Energy & Environmental Support Activity Officer in Charge Port Hueneme, CA 93043-5014
NAVFAC	Naval Facilities Engineering Command 200 Stovall Street Code DSO-2 Alexandria, VA 22332-2300
ND	Navy Direcom 200 Stovall Street Code DS02B Alexandria, VA 22332-2300
NELMA	North American Insulation Manufacturers Association 44 Canal Center Plaza, Suite 310 Alexandria, VA 22314
NCDOT	North Carolina Department of Transportation No. 1 South Wilmington P.O. Box 25201 Raleigh, NC 27611
NELMA	Northeastern Lumbar Manufacturers Association P.O. Box 87A Cumberland Center, ME 04021
NVDSAPCB	Northern Virginia Division, State Air Pollution Control Board 6225 Brandon Ave., No. 310 Springfield, VA 22150
PF1	Pipe Fabrication Institute P.O. Box 173 Springdale, PA 15144
PPI	Plastics Pipe Institute Wayne Interchange Plaza H 155 Route 46 West Wayne, NJ 07470

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PDI	Plumbing and Drainage Institute 1106 West 77th, South Dr. Indianapolis, IN 462-3318
PPIC	Plumbing and Piping Industry Council 501 Shatto Place - Suite 402 Los Angeles, CA 90020
PEI	Porcelain Enamel Institute 1101 Connecticut Ave., NW, Suite 700 Washington D.C. 20036
PCA	Portland Cement Association 5420 Old Orchard Rd. Shokie, IIL 60077
PCI	Prestressed Concrete Institute 175 W. Jackson Blvd. Chicago, IL 60606
PS	Product Standard U.S. Department of Commerce Washington, DC 20203
RIS	Redwood Inspection Service 405 Enfrente Dr., Suite 200 Norato, CA 94949
RCSHSB	Red Cedar Shingle and Handsplit Shake Bureau 515 116th Avenue Bellevue, WA 98004
RFCI	Resilient Floor Covering Institute 966 Hungerford Dr., Suite 12-B Rockville, MD 20805
RMA	Rubber Manufacturers Association 1400 K Street, NW Washington D.C. 20005

REA	Rural Electrification Administration USDA-REA-ASD Administrative Services Division Publications and Directives Management Branch South Agriculture Building Attn: Publications, Room 0180 14th and Independence Avenue, SW Washington D.C. 20250
SGCC	Safety Glazing Certification Council c/o ETL Testing Laboratories Route 11, Industrial Park Cortland, NY 13045
SAMA	Scientific Apparatus Makers Assoc. 225 Reinkers, Suite 625 Alexandria, VA 22314
SMA	Screen Manufacturers Association 655 Irving Park at Lake Shore Drive, Suite 201 Chicago, IL 60613-3198
SWRI	Sealant Waterproofing Institute 3101 Broadway, Suite 585 Kansas City, MO 64111
SIGMA	Sealed Insulating Glass Manufacturers Association 401 North Michigan Ave. Chicago, IL 60611
SEMI	Semiconductor Equipment and Materials International Attn: Standards Dept. 805 East Middlefield Rd. Mountain View, CA 94043
SMACNA	Sheet Metal & Air Conditioning Contractors' National Association P.O. Box 221230 Chantilly, VA 22022
SPRI	Single-Ply Roofing Institute 20 Walnut Street, Suite No. 8 Wellesley Hills, MA 02181
SAE	Society of Automotive Engineers, 400 Commonwealth Dr. Warrendale, PA 15096-0001

SPI	Society of the Plastics Industry, Inc. 1275 "K" Street, N.W., Suite 400 Washington D.C. 20005
SRCC	Solar Rating and Certification Corporation Interstate Solar Coordination Council 900 America Center Building St. Paul, MN 55101
SCDHEC	South Carolina Dept. Of Health and Environment Control 334 Calihalin Street Charleston, SC 29401
SBCCI	Southern Building Code Congress International 900 Montclair Rd. Birmingham, AL 35213
SCMA	Southern Cypress Manufacturers Association 400 Penn Center Blvd. - Suite 530 Pittsburgh, PA 15235
SPIB	Southern Pine Inspection Bureau 4709 Scenic Highway Pensacola, FL 32504-9094
S.D.I	Steel Deck Institute P.O. Box 9506 Canton, OH 44711
SDI	Steel Door Institute 30200 Detroit Rd. Cleveland, OH 44145-1967
SJI	Steel Joist Institute 1205 48th Avenue, North - Suite A Myrtle Beach, SC 29577
SSPC	Steel Structures Painting Council 4400 Fifth Avenue Pittsburgh, PA 15213
STI	Steel Tank Institute 570 Oakwood Rd. Lake Zurich, IL 60047



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SWI	Steel Window Institute 1300 Sumner Ave. Cleveland, OH 44115-2851
SEAOC	Structural Engineers Association of California P.O. Box 399 Fair Oaks, CA 95628-0399
SWPA	Submersible Wastewater Pump Assoc. 600 S. Federal Street, Suite 400 Chicago, IL 60605
SSPMA	Sump & Sewage Pump Manufacturers Assoc. P.O. Box 298 Winnetka, IL 60093
TAS	Technical Aid Series Construction Specifications Institute 601 North Madison Street Alexandria, VA 22314
TAPPI	Technical Association of the Pulp and Paper Industry P.O. Box 105113 Atlanta, GA 30348-5113
TIMA	Thermal Insulation Manufacturers Assoc. 29 Bank Street Stamford, CT 06901
TCA	Tile Council of America, Inc. Box 326 Princeton, NJ 08540
TPI	Truss Plate Institute 583 D'Onofrio Dr., Suite 200 Madison, WI 53719
TEMA	Tubular Exchanger Manufacturers Association 25 N. Broadway Tarrytown, NY 10591
UL	Underwriters' Laboratories, Inc. 333 Pfingston Road Northbrook, IL 60062

UBPPA	Uni-Bell PVC Pipe Association 2655 Villa Creek Drive, Suite 155 Dallas, TX 75234
UCDANR	University of California Division of Agriculture and Natural Resources Agricultural Publication 6701 San Pablo Avenue Oakland, CA 94608-1239
PS	U.S. Dept. Of Commerce Product Standards Superintendent of Documents U.S. Government Printing Office Washington D.C. 20402
USP	U.S. Pharmacopoeia 12601 Twinbrook Parkway Rockville, MD 20852
VDHT	Virginia Dept. Of Highways & Transportation 1401 East Broad Street Richmond, VA 23219
VDPC	Virginia Dept. Of Pollution Control Dept. Of Labor & Industry 205 North Fourth Street P.O. Box 12064 Richmond, VA 23241
VDOT	Virginia Dept. Of Transportation 1401 East Broad Street Richmond, VA 23219
VSWCC	Virginia Division of Soil and Water Conservation Commission 203 Governor Street, Suite 206 Richmond, VA 23219
WCMA	Wallcovering Manufacturers Assoc. 355 Lexington Ave. New York, NY 10017
WPCF	Water Pollution Control Federation 601 Wythe Street Alexandria, VA 22314-1994

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WQA	Water Quality Association 4151 Naperville Rd. Lisle, IL 60532
WSC	Water Systems Council 600 S. Federal Street, Suite 400 Chicago, IL 60605
WRC	Welding Research Council 345 East 47th Street New York, NY 10017
WCLIB	West Coast Lumber Inspection Bureau 6980 S.W. Varns Road Box 23145 Portland, OR 97223
WLPDIA	Western Lath Plaster Drywall Industries Association (Formerly California Lath & Plaster Assoc.) 8635 Navajo Rd. San Diego, CA 92119
WWPA	Western Wood Products Association Yeon Building 522 S.W. 5th Avenue Portland, OR 97204-2122
WRI	Wire Reinforcement Institute 1760 Reston Parkway - Suite 403 Reston, VA 22090
WMMPA	Wood Moulding and Millwork Procedures Association P.O. Box 25278 Portland, OR 97225
WSFI	Wood & Synthetic Flooring Institute 4415 W. Harrison Street, Suite 242 C Hillside, IL 60162
WIC	Woodwork Institute of California P.O. Box 11428 Fresno, CA 93773
W.W.P.A.	Woven Wire Products Assoc 2515 N. Nordica Ave. Chicago, 11L 60635

## Specification Writing Techniques – Section Format Outline

PART 1 GENERAL	PART 2 PRODUCTS	PART 3 EXECUTION
<p><b>SUMMARY</b>            Section includes            Products furnished but not installed under this Section            Products installed but not furnished under this Section            Related Sections            Allowances            Unit Prices            Alternates/Alternatives</p> <p><b>REFERENCES</b></p> <p><b>DEFINITIONS</b></p> <p><b>SYSTEM DESCRIPTION</b>            Design Requirements            Performance Requirements</p> <p><b>SUBMITTALS</b>            Product Data            Shop Drawings            Samples            Quality Control Submittals                Design Data                Test Reports                Certificates                Manufacturer's Instructions                Manufacturer's Field Reports            Contract Closeout Submittals                Project Record Documents                Operation and Maintenance            Data Warranty</p>	<p><b>QUALITY ASSURANCE</b>            Qualifications            Regulatory Requirements            Certifications            Field Samples            Mock-ups            Pre-installation conference</p> <p><b>DELIVERY, STORAGE AND HANDLING</b>            Packing and Shipping            Acceptance at Site            Storage and Protection</p> <p><b>PROJECT/SITE CONDITIONS</b>            Environmental Requirements            Existing Conditions            Field Measurements</p> <p><b>SEQUENCING AND SCHEDULING</b></p> <p><b>WARRANTY</b>            Special Warranty</p> <p><b>MAINTENANCE</b>            Maintenance Service            Extra Materials</p>	<p><b>MANUFACTURERS</b></p> <p><b>MATERIALS</b></p> <p><b>MANUFACTURED UNITS</b></p> <p><b>EQUIPMENT</b></p> <p><b>COMPONENTS</b></p> <p><b>ACCESSORIES</b></p> <p><b>MIXES</b></p> <p><b>FABRICATION</b>            Shop Assembly            Shop/Factory Finishing            Tolerances</p> <p><b>SOURCE QUALITY CONTROL</b>            Tests            Inspection            Verification of performance</p> <p><b>EXAMINATION</b>            Verification of Conditions</p> <p><b>PREPARATION</b>            Protection            Surface Preparation</p> <p><b>ERECTION/INSTALLTION/ APPLICATION</b>            Special Techniques            Interface with other products            Tolerances</p> <p><b>FIELD QUALITY CONTROL</b>            Tests            Inspection            Manufacturer's Field Service</p> <p><b>ADJUSTING</b></p> <p><b>CLEANING</b></p> <p><b>DEMONSTRATION</b></p> <p><b>PROTECTION</b></p> <p><b>SCHEDULES</b></p>

**MASSACHUSETTS PORT AUTHORITY  
CAPITAL PROGRAMS DEPARTMENT  
LOGAN OFFICE CENTER - SUITE 209S  
ONE HARBORSIDE DRIVE  
EAST BOSTON, MASSACHUSETTS 02128-2909**

**CONTRACT DOCUMENTS**

**AND**

**SPECIFICATIONS FOR**

**MPA PROJECT NO.  
DESCRIPTION OF JOB  
LOCATION  
CITY, MASSACHUSETTS  
  
MONTH, YEAR**

**SPECIFICATION TITLE SHEET**  
**MASSACHUSETTS PORT AUTHORITY**  
**CAPITAL PROGRAMS DEPARTMENT**

**SPECIFICATIONS FOR**

**MPA PROJECT No.:** \_\_\_\_\_

\_\_\_\_\_  
**(Project Title)**

\_\_\_\_\_  
**(Location)**

\_\_\_\_\_  
**(Designer)**

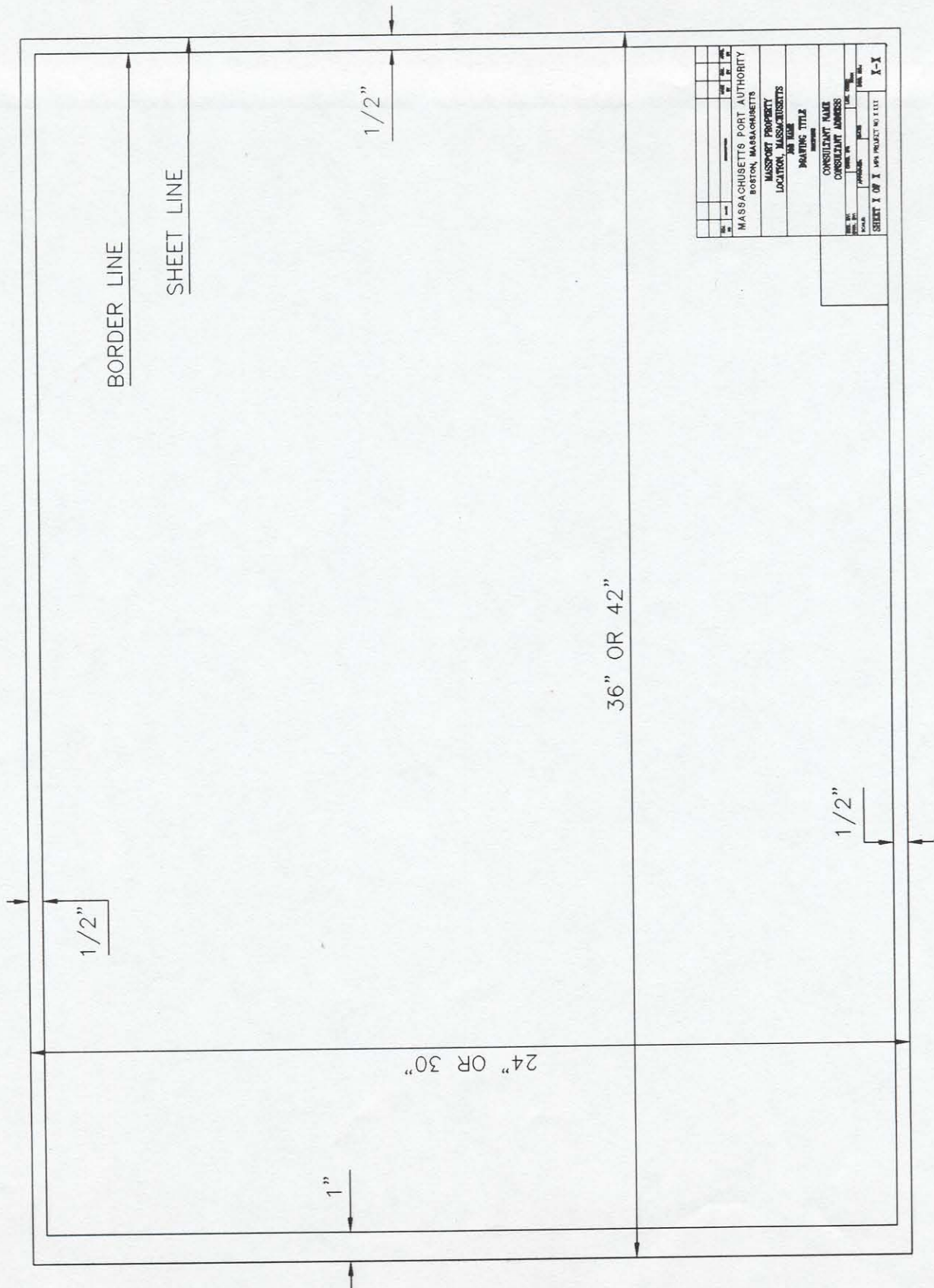
\_\_\_\_\_  
**Consultant**

\_\_\_\_\_  
**Consultant**

\_\_\_\_\_  
**Consultant**

**Date:** \_\_\_\_\_

DRAWING LAYOUT



## DRAWING TITLE SHEET

## MASSACHUSETTS PORT AUTHORITY

★ BOSTON, MASSACHUSETTS ★

## JOB NAME

MASSPORT PROPERTY  
LOCATION, MASSACHUSETTS  
MPA. PROJECT NO. X.XXX

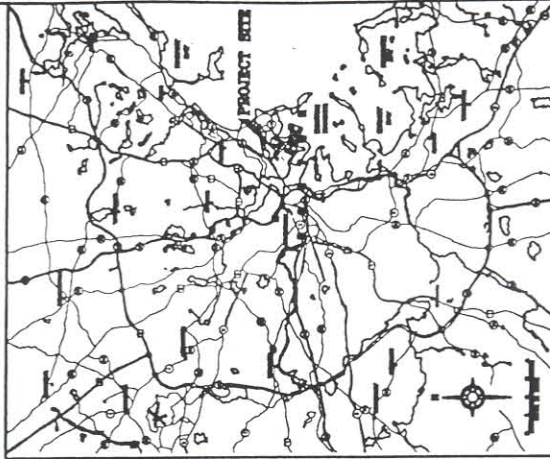
MASSACHUSETTS PORT AUTHORITY  
APPROVAL

DESIGNER NAME AND TITLE \_\_\_\_\_ DATE \_\_\_\_\_  
REVIEWER NAME AND TITLE \_\_\_\_\_ DATE \_\_\_\_\_



CONSULTANT NAME  
CONSULTANT ADDRESS

ARCHITECTURAL \_\_\_\_\_ MECHANICAL \_\_\_\_\_ ELECTRICAL \_\_\_\_\_



LIST OF DRAWINGS  
SHT 1 OF X T-1 TITLE SHEET

SHEET 1 OF X T-1



TITLE BLOCK STANDARD

REV. NO	DATE	DESCRIPTION	MADE BY	CHK. BY	APPD. BY				
MASSACHUSETTS PORT AUTHORITY BOSTON, MASSACHUSETTS									
MASSPORT PROPERTY LOCATION, MASSACHUSETTS									
JOB NAME									
DRAWING TITLE									
DISCIPLINE									
CONSULTANT NAME									
CONSULTANT ADDRESS									
DES. BY:	CHKD. BY:	LOC. CODE:							
DWN. BY:		XXXX							
SCALE:	APPROVED:	DATE:	DWG. NO.:						
SHEET X OF X MPA PROJECT NO. X.XXX									
X-X									

## THE ARCHITECTURAL AREA AND VOLUME OF BUILDINGS

### AIA Document D101 Methods of Calculating Areas and Volumes of Buildings

*There is no single standard for calculating areas and volumes of buildings. This document describes several options for calculation that may be at variance with applicable building code(s). Concurrence as to method(s) used and conformance to applicable code(s) is necessary.*

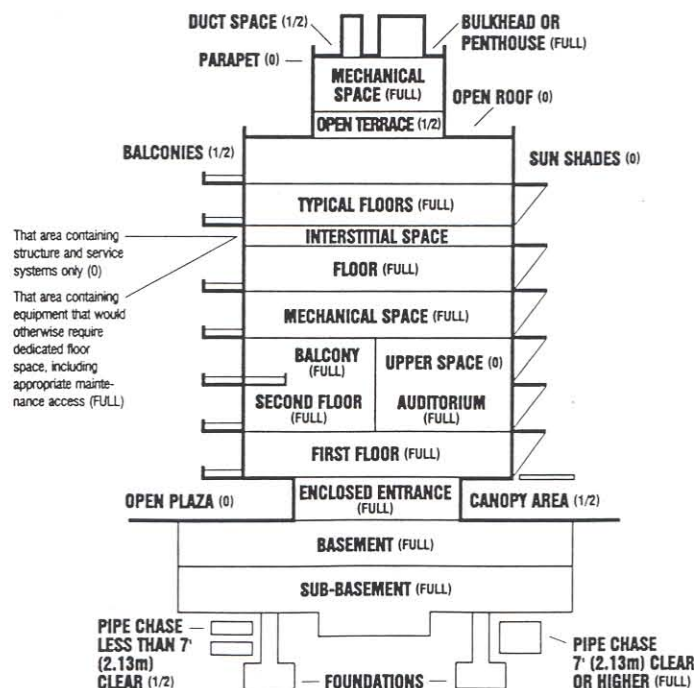
#### ARCHITECTURAL AREA OF BUILDINGS

The ARCHITECTURAL AREA of a building is the sum of the areas of the floors of the building, measured from the exterior faces of exterior walls or from the centerline of walls separating buildings. The architectural area includes basements, mezzanines, intermediate floors and penthouses, provided that these areas have a minimum of seven feet (2.13 meters) headroom height. Discretion is advised in calculating areas of interstitial space, such as mechanical spaces where live load requirements meet or exceed those permitted for habitation under local building codes.

- Paved or finished covered areas, such as open porches and similar spaces, shall have the architectural area multiplied by an area factor of 0.50.
- The architectural area does not include such features as utility chases (less than seven feet [2.13 meters] to any physical obstruction), exterior terraces, steps or eaves.

#### ARCHITECTURAL VOLUME OF BUILDINGS

The ARCHITECTURAL VOLUME (cubic volume) of a building is the sum of the products of the areas defined above, multiplied by the floor-to-floor height or floor-to-mean-finished-roof height.



ARCHITECTURAL  
AREA DIAGRAM

Firm Name: _____  Address: _____ _____  Telephone No.: _____  Fax/e-mail: _____	<b>COST ESTIMATE</b>
	MPA Contract No.: _____  MPA Contract Name: _____  Description of Work: _____
	Prepared by: _____ Sheet No.: _____ of _____

[illegible]

**PROJECT SIGN**



APPLICATION FOR UNESCORTED ACCESS PRIVILEGES  
AT LOGAN INTERNATIONAL AIRPORT

PART 1 - TO BE COMPLETED BY BADGE COORDINATOR

Applicant will require:	Key Card	AOA Class 1	AOA Class 2B	DATE  STAMP		
	Fingerprints	Ramp Access	AOA Class 2A			
			AOA Class 2			
Will the applicant require an Employee Escort-Required Badge?	No	Yes				
If Yes, please submit Form #EA2 (Employee Escort-Required Badge Application) along with this application.						
Applicant's Access Requirement ( <i>Check only one</i> ):						
Terminals	A	B	C	D	E	
	North Cargo	South Cargo	General Aviation	Full Access		
Would this person be required to respond in the event of an Airport emergency?					No	Yes

**FOR MASSPORT APPLICANTS ONLY:**

MASSPORT UNIT #: \_\_\_\_\_

MASSPORT UNIT MANAGER: \_\_\_\_\_

MASSPORT PHONE NUMBER/EXTENSION: \_\_\_\_\_

PART 2 - TO BE COMPLETED

SAMPLE  
NOT FOR USE

Name: \_\_\_\_\_ Last \_\_\_\_\_

Aliases or Nicknames: \_\_\_\_\_

Home Address: \_\_\_\_\_ Street \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Phone: \_\_\_\_\_

Social Security Number: \_\_\_\_\_ Date of Birth: \_\_\_\_\_ Place of Birth: \_\_\_\_\_

Sex: Male \_\_\_\_\_ Height: \_\_\_\_\_ Weight: \_\_\_\_\_ Eye Color: \_\_\_\_\_ Hair Color: \_\_\_\_\_  
Female \_\_\_\_\_

Employer: \_\_\_\_\_ Position: \_\_\_\_\_

Are you required to carry a firearm to perform your job function?: No Yes

Do you have a valid driver's license: No Yes Were you at least 18 on your last birthday? No Yes

License #: \_\_\_\_\_ State: \_\_\_\_\_ Class: \_\_\_\_\_ Restrictions: \_\_\_\_\_

Are you a U. S. Citizen or do you have an Employment Authorization or Resident Alien Card: No Yes

Employment Authorization #: \_\_\_\_\_ Resident Alien #: \_\_\_\_\_ Expiration Date: \_\_\_\_\_

Have you ever been issued a Massport Security Badge and/or Key Card? No Yes

Badge #: \_\_\_\_\_ Key Card #: \_\_\_\_\_

**PART 3 (*Continued*) - CERTIFICATION - MUST BE SIGNED BY BADGE COORDINATOR**

1. In accordance with 14 CFR 107.31, all applicants requested Unescorted Access must be fingerprinted. Applicants who refuse to be fingerprinted will be denied unescorted access.
2. Have you ever been arrested or convicted of any crime in the past ten (10) years?

No Yes

If Yes, please specify: \_\_\_\_\_

3. Unescorted access will be denied if the fingerprint records check reveals a conviction for:

- |  |   |
|--|---|
| (i) Forgery of certificates, false marking of aircraft and other aircraft registration violation, 49 U.S.C. 46306; | (xix) Rape or aggravated sexual abuse;  |
| (ii) Interference with air navigation, 49 U.S.C. 46306;  | (xx) Unlawful possession, use, sale, distribution or manufacture of an explosive or weapon; |
| (iii) Improper transportation of a hazardous material, 49 U.S.C. 46312;  | (xxi) Extortion;  |
| (iv) Aircraft piracy, 49 U.S.C. 46502;   | (xxii) Armed or felony unarmed robbery;   |
| (v) Interference with flight crew members or flight attendants, 49 U.S.C. 46504;                                   | (xxiii) Felony involving a threat;  |
| (vi) Commission of certain crimes aboard aircraft in flight, 49 U.S.C. 46506;                                      | (xxiv) A felony involving -   |
| (vii) Carrying a weapon or explosive aboard aircraft, 49 U.S.C. 4  | I willful destruction of property.  |
| (viii) Conveying aircraft, 49 U.S.C. 46507;  | II Importation or manufacture of a controlled substance                                     |
| (ix) Aircraft registration of the United States;   | III Burglary  |
| (x) Lighting of aircraft;  |   |
| (xi) Unlawful use of aircraft;   |   |
| (xii) Destruction of an aircraft or aircraft facility, 49 U.S.C. 4632;   |   |
| (xiii) Murder  |   |
| (xiv) Assault with intent to murder;   | (xxv) Distribution of or intent to distribute a controlled substance;                       |
| (xv) Espionage;  | (xxvi) Felony arson; or   |
| (xvi) Sedition;  | (xxvii) Conspiracy or attempt to commit any of the aforementioned criminal acts             |
| (xvii) Kidnapping or hostage taking;   | (xxviii) A felony involving (i-xxvii).  |
| (xviii) Treason  |   |

SAMPLE  
NOT FOR USE

NOTE: Convictions for offenses other than the ones listed above may not necessarily result in disqualification. However, failure to disclose a conviction for any offense will result in disqualification.

I, the undersigned, certify that all of the statements made on this application are, to the best of my knowledge, true and made in good faith. I understand that if I knowingly made any misstatements of fact, or failed to report a conviction, that I am subject to denial or revocation of all security privileges.

I also understand that I am required to report any subsequent convictions of the offenses listed in Question 3, above, within twenty-four (24) hours, and I must surrender my Airport-issued security I.D. to the Massport Security Badge Office within twenty-four (24) hours. \_\_\_\_\_

(Applicable to air carrier employees at Logan International Airport only):

By submitting this application and signing below, I hereby authorize the Massachusetts State Police, on behalf of the Massachusetts Port Authority, to transmit the results of the fingerprint records check completed in connection with this application to the air carrier by whom I am employed at Logan International Airport, and agree to release and hold harmless the Massachusetts Port Authority and the Massachusetts State Police from and against all liabilities arising out of the transmittal of such information to said air-carrier employer.

Signature of Applicant: \_\_\_\_\_ Date: \_\_\_\_\_

Two (2) forms of valid identification are required at time of badge issuance. One form must be State issued.

The point of contact for information regarding Airport fingerprinting procedures  
Is the Massport Public Safety Security Badge Office.  
Telephone number: (617)561-1706

**PART 3 (Continued) – CERTIFICATION – MUST BE SIGNED BY BADGE COORDINATOR**

Section 2(c)(3)(f) may exempt from the fingerprinting process those groups of individuals referenced in 107.31(m), which includes an individual who has been continuously employed in a position requiring unescorted access. CONTINUOUS EMPLOYMENT OCCURS WHEN AN INDIVIDUAL HAS SECURED A POSITION WITH THE NEXT EMPLOYER AT THE TIME HE LEAVES HIS CURRENT EMPLOYER. IF THERE IS A PERIOD OF ACTUAL UNEMPLOYMENT, HOWEVER LONG, WHILE THE INDIVIDUAL IS SEEKING ANOTHER JOB, THEN THE UNESCORTED-ACCESS PRIVILEGE EXPIRES AND THE INDIVIDUAL IS A NEW APPLICANT FULLY SUBJECT TO EITHER 107.31 OR 108.33. The gaining employer can determine whether or not to accept the paperwork that documents the information verified by the losing employer.

Was this employee continuously employed with unescorted access privileges at Logan?      Yes      No

The appropriate evidence for continuous employment shall, at a minimum, include the information specified below.

Name of the employer: \_\_\_\_\_  
Address: \_\_\_\_\_  
Contact Person: \_\_\_\_\_ Phone No.: \_\_\_\_\_  
Dates of Employment:      Start      End Date:  
Date: \_\_\_\_\_  
Employee's Job Title: \_\_\_\_\_

As a representative of \_\_\_\_\_, I certify this applicant is in the employ of said company,

And the type of acc

If the application i  
operation of our e  
Massport for the lic

SAMPLE  
NOT FOR USE

qualified in the  
d regulations of

We certify that the \_\_\_\_\_ as required by  
Federal Aviation Administration Part 107.31. This employee will be given proper training to conduct  
his/her job in a manner that will not negatively affect the safety and security of persons or property at  
Logan International Airport.

Date of S.I.D.A. Training	Location	Instructor
<p>We agree to notify the Massport Security Badge Office immediately if the employment of this employee is terminated or if any security badges and/or keycards issued to employees of said company are lost, stolen or otherwise "unaccounted" for. We agree that upon termination or voluntary departure of this employee, his/her security badge and keycard will be promptly returned to Massport's Security Badge Office. We also agree that, if they are not returned, said company will be subject to applicable fines in accordance with Massport's Rules and Regulations and Airport Security Program.</p>		

Badge Coordinator:		
Name (Print or Type) Company	Date You Were  SIDA Trained	
Signature (Do Not Print) Phone	Date	E-Mail Address

*A Security Badge not claimed in sixty days will require a new application and application fee.*



PART 4: FOR MASSPORT USE ONLY

Entered By: \_\_\_\_\_ Date: \_\_\_\_\_

Badge #: \_\_\_\_\_ Key Card #: \_\_\_\_\_ Pin #: \_\_\_\_\_

Issue Date: \_\_\_\_\_ By: \_\_\_\_\_ Exp. Date: \_\_\_\_\_

Escort Weekly Badge #: \_\_\_\_\_ (Must be returned before an Unescorted Access I.D. can be issued)

REPLACEMENT BADGE, KEY CARD, AND/OR PIN NUMBERS

Badge #: \_\_\_\_\_ Key Card #: \_\_\_\_\_ Pin #: \_\_\_\_\_

Issue Date: \_\_\_\_\_ By: \_\_\_\_\_ Exp. Date: \_\_\_\_\_

ENTERED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

CUSTOM SEAL

EMPLOYEE

RETURN:

SIGNATURE:

Aerodrome License Information

MASSPORT AERODROME:

TESTED: PASS  
FAIL

SAMPLE

TESTED: PASS  
FAIL

NOT FOR USE

TESTED: PASS  
FAIL

BY:

DATE:

PART 4A: FOR STATE POLICE USE ONLY

Is the Applicant approved for an Unescorted Access I.D.? No Yes

State Drivers License Valid? No Yes

Should the Applicant receive an Aerodrome License? No Yes

Approved by: \_\_\_\_\_ Officer's Signature \_\_\_\_\_ Date \_\_\_\_\_ Case Number \_\_\_\_\_

COMMENTS:

DATE  
STAMP

Firm Name: _____ Address: _____ _____ _____ Telephone: _____ Fax: _____		<b>CONDITION SURVEY</b>				
		MPA Contract No.:			Date:	
		Contract Title:				
		Location in Building:			Room/Space:	
		Prepared by:			Sheet No.    of	
Perimeter Dimensions: _____ Area of Space/Room: _____ Floor to Ceiling Height: _____						
Components	Construction Materials	Clean/Paint	Repair	Replace	Comments	
Foundation						
Floor						
Roof						
Base						
Walls						
➤ Exterior						
➤ Interior						
➤ Low Height						
➤ Movable						
Ceiling						
Woodwork/Trim						
Doors						
Windows						
Lighting						
Electric Outlets						
Phone Jack						
Plumbing						
Fire Sprinklers/Alarm						
Air Conditioning						
Heating						
Miscellaneous						
Miscellaneous Observations:						

**MASSACHUSETTS PORT AUTHORITY  
CAPITAL PROGRAMS DEPARTMENT  
SUITE 209S - LOGAN OFFICE CENTER  
ONE HARBORSIDE DRIVE  
EAST BOSTON, MASSACHUSETTS 02128-2909**

**PROPOSAL**

**MPA CONTRACT NO.  
DESCRIPTION OF JOB  
LOCATION, MASSACHUSETTS**

**MONTH, YEAR**

**MASSACHUSETTS PORT AUTHORITY**

Name ..... Chairman

Name ..... Vice-Chairman

Name ..... Member

Name ..... Member

Name ..... Member

Name ..... Member

Name. .... CEO and Executive Director

Name ..... Director of Capital Programs and Logan Modernization

**MASSACHUSETTS PORT AUTHORITY****NOTICE TO CONTRACTORS**

Sealed General Bids for MPA Contract No. \*\*[CONTRACT NO., TITLE, and LOCATION in CAPS]\*\*, will be received by the Massachusetts Port Authority at the Capital Programs Department Office, Suite 209S - Logan Office Center, One Harborside Drive, East Boston, Massachusetts 02128-2909, until 11:00 A.M. local time on \*\*[DAY AND DATE]\*\* immediately after which, in a designated room, the proposal will be opened and read publicly.

Sealed filed sub-bids for the same contract will be received at the same office until 11:00 A.M. local time on \*\*[DAY AND DATE]\*\*, immediately after which, in a designated room, the filed sub-bids will be opened and read publicly.

NOTE: PRE-BID CONFERENCE WILL BE HELD AT THE CAPITAL PROGRAMS DEPARTMENT (ABOVE ADDRESS) AT \*\*[TIME]\*\* LOCAL TIME ON \*\*[DAY AND DATE]\*\*

The work includes \*\*[CONTRACT DESCRIPTION INCLUDING TYPE OF WORK AND TRADES ALL IN CAPS]\*\*

Bid documents will be made available beginning \*\*[DAY AND DATE]\*\*

In order to be eligible and responsible to bid on this contract General Bidders must submit with their bid a current Certificate of Eligibility issued by the Division of Capital Asset Management and an Update Statement. The General Bidder must be certified in the category of \*\*[CATEGORY]\*\*. The estimated contract cost is \$ \*\*[VALUE]\*\*.

Bid Documents may be obtained at the Authority's Capital Programs Department Office, together with any addenda or amendments which the Authority may issue. A charge of \$ \*\*[25, 50, or 100]\*\* PAYABLE BY COMPANY CHECK OR MONEY ORDER ONLY, will be made for these Documents, which charge will be refunded upon their return in good condition, within forty-five (45) days after receipt of the General Bids.

Bidding procedures and award of the contract and sub-contracts shall be in accordance with the provisions of Sections 44A through 44H inclusive, Chapter 149 of the General Laws of the Commonwealth of Massachusetts.

A proposal guaranty shall be submitted with each General Bid consisting of a bid deposit for five (5) percent of the value of the bid; when sub-bids are required, each must be accompanied by a deposit equal to five (5) percent of the sub-bid amount, in the form of a bid bond, or cash, or a certified check, or a treasurer's or a cashier's check issued by a responsible bank or trust company, payable to the Massachusetts Port Authority in the name of which the Contract for the work is to be executed. The bid deposit shall be (a) in a form satisfactory to the Authority, (b) with a surety company qualified to do business in the Commonwealth and satisfactory to the Authority, and (c) conditioned upon the faithful performance by the principal of the agreements contained in the bid.

The successful Bidder will be required to furnish a performance bond and a labor and materials payment bond, each in an amount equal to 100% of the Contract price. The surety shall be a surety company or securities satisfactory to the Authority. Attention is called to the minimum rate of wages to be paid on the work as determined under the provisions of Chapter 149, Massachusetts General Laws, Section 26 to 27G, inclusive, as amended. The Contractor will be required to pay minimum wages in accordance with the schedules listed in Division II, Special Provisions of the Specifications, which wage rates have been predetermined by the U. S. Secretary of Labor and /or the Commissioner of Labor and Industries of Massachusetts, whichever is greater.

The successful Bidder will be required to purchase and maintain Bodily Injury Liability Insurance and Property Damage Liability Insurance for a combined single limit of \$\*\*[AMOUNT]\*\*. Said policy shall be on an occurrence basis and the Authority shall be included as an Additional Insured. See the insurance sections of Division I, General Requirements and Division II, Special Provisions for complete details.

Return of bid deposits will be in accordance with the provisions of Chapter 149, Section 44B of the Massachusetts General Laws.

Filed sub-bids will be required and taken on the following classes of work:

**[USE APPROPRIATE SUB-TRADES]**

HEATING, VENTILATING, AND AIR-CONDITIONING	TILE
WATERPROOFING, DAMP-PROOFING, AND CAULKING	MARBLE
MISCELLANEOUS AND ORNAMENTAL IRON	MASONRY
LATHING AND PLASTERING	TERRAZZO
ROOFING AND FLASHING	PAINTING
GLASS AND GLAZING	PLUMBING
RESILIENT FLOORS	ELEVATORS
ACOUSTICAL TILE	ELECTRICAL
METAL WINDOWS	

The Authority reserves the right to reject any sub-bid of any sub-trade where permitted by Section 44E of the above-referenced General Laws. The right is also reserved to waive any informality in or to reject any or all proposals and General Bids.

This contract is subject to a Disadvantaged Business Enterprise participation provision requiring that not less than \*\*[NUMBER]\*\* % of the Contract be performed by disadvantaged business enterprise contractors. With respect to this provision, bidders are urged to familiarize themselves thoroughly with the Bidding Documents. Strict compliance with the pertinent procedures will be required for a bidder to be deemed responsive and eligible.

This Contract is also subject to Affirmative Action requirements of the Massachusetts Port Authority contained in the Non-Discrimination and Affirmative Action article of Division I, General Requirements and Covenants, and to the Secretary of Labor's Requirement for Affirmative Action to Ensure Equal Opportunity and the Standard Federal Equal Opportunity Construction Contract Specifications (Executive Order 11246).

The General Contractor is required to submit a Certification of Non-Segregated Facilities prior to award of the Contract, and to notify prospective subcontractors of the requirement for such certification where the subcontract exceeds \$10,000.

Complete information and authorization to view the site may be obtained from the Capital Programs Department Office at the Massachusetts Port Authority. The right is reserved to waive any informality in or reject any or all proposals.

**MASSACHUSETTS PORT AUTHORITY  
NAME  
EXECUTIVE DIRECTOR AND CEO**

**INSTRUCTIONS TO BIDDERS****MPA CONTRACT NO. \*\*[NUMBER]\*\***

These are special instructions as to submissions of bids to help avoid irregular bids and to reduce cost of advertising. Some or all of these instructions may be included in the Specifications, Special Provisions, or other Contract Documents, but this additional emphasis is intended to be helpful in avoiding errors.

**1. EXAMINATION OF THE SITE**

Authorization for the Bidders to view the site of the work shall be obtained from the Project Manager, Massachusetts Port Authority, Suite 209S - Logan Office Center, One Harborside Drive, East Boston, Massachusetts 02128-2909 (Telephone No. 617-568-5950).

**2. INQUIRIES RELATIVE TO INTERPRETATIONS OF PLANS AND SPECIFICATIONS**

Any inquiries by bidders as to interpretations of the Drawings, Specifications, Special Provisions, or other Contract Documents will not be answered verbally, but to be given consideration, must be submitted in writing to the Director of Capital Programs and Logan Modernization not later than seven (7) days before the advertised date for the opening of the bids. All answers to such inquiries will be in the form of Addenda and will be furnished to all Bidders in accordance with Article 4, Division I, of these Specifications.

**3. PREPARATION OF PROPOSAL**

The Bidder shall submit his/her proposal upon the proposal form furnished by the Authority. The Bidder shall specify a price, in both words and figures. All words and figures shall be in ink. In case of a discrepancy between the prices written in words and those written in figures, the written words shall govern.

In addition to the signature requirement on the Bid Form, certain additional certifications contained in the Proposal are to be submitted. Bidders are advised that failure to comply will prevent the Authority from making a proper determination of the Bidder's eligibility for award of the contract, and in the absence of same a Proposal cannot be considered.

Other forms, which appear in the bound Contract Documents, must be completed by the Contractor prior to award of the Contract.

**4. ADDENDA**

The Bidder is required to acknowledge receipt of any Addenda issued to this Contract by inserting the Addendum Number in the space provided in the Form for General Bid.

**5. STATEMENT REQUIRED BY 41 CFR SECTION 60-1.7(b)**

Notice is hereby given that Section 60-1.7(b) of the Regulations of the Office of Federal Contract Compliance requires each bidder or prospective prime contractor and proposed subcontractor,



where appropriate, to state in the bid whether it has developed and has on file at each establishment affirmative action proposals pursuant to Part 60-2 of the regulations; whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; whether it has filed with the Joint Reporting Committee, the Director, or the Equal Employment Opportunity Commission all reports due under the applicable filing requirements. In any case in which a bidder or prospective prime contractor or proposed subcontractor has participated in a previous contract subject to Executive Orders 10925, 11114, or 11246 and has not filed a report due under the applicable filing requirements, no contract or subcontract shall be awarded unless such contractor submits a report covering the delinquent period or such other period specified by the Director, OFFCC. To effectuate these requirements, the Bidder shall complete and sign the statement that appears in the form for General Bid.

**6. EQUAL OPPORTUNITY AND AFFIRMATIVE ACTION REQUIREMENTS**

This Contract contains a Massachusetts Port Authority Disadvantaged Business Enterprise Participation provision, the complete terms of which are set forth in Division IIA, pages IIA-\*\*(NUMBER)\*\* to IIA-\*\*(NUMBER)\*\*.

Bidders are advised that the form "Letter of Intent/Schedule of Participation" appended to the Bid Form at page P-\*\*[NUMBER]\*\* may be submitted with the Bid Form, and is required of the apparent low bidder within five (5) days of bid opening. If the Letter of Intent/Schedule of Participation is not submitted within five days of bid opening, the apparent low bidder will be deemed ineligible and the second low bidder will be required to submit these documents.

In completing this form, Bidders should review the specification carefully and in particular should note:

1. The firms must be clearly identified by name, address and telephone number in the appropriate space.
2. The description of the work to be performed by the firms must be clearly identified either by trade or as a manufacturer or supplier in the appropriate space.
3. The definitions of Disadvantaged Business Enterprises are contained on Page IIA-3 of the Contract Documents. In accordance with the Contract Documents, the Authority will deem any firm appearing on the current list of minority/women-owned contractors certified by the State Office of Minority & Women Business Assistance to be a DBE firm for purposes of this provision.

**7. PRE-AWARD REQUIREMENTS**

Pursuant to Affirmative Action and Equal Opportunity requirements to the Contract, the Contractor must execute forms and certifications appearing in the Contract Documents. These certifications relate to non-segregated facilities, compliance with Federal and Massachusetts Port Authority workforce requirements, and the contractor's overall efforts on this Contract to subcontract with disadvantaged business enterprises. Executed Letter of Intent/Schedule of Participation must also be submitted to the Authority in the form set forth as a sample on Page IIA-\*\*(NUMBER)\*\* of the Contract Documents.

8. DIVISION I REVISIONS

The attention of Bidders is called to the fact that the Authority continually strives to improve its Bid Documents and modifies certain provisions of Division I, General Conditions. The most recent modified portions of effected Articles have been underlined for convenience. The Bidder should be familiar with these modifications prior to the Bid.

**MASSACHUSETTS PORT AUTHORITY****FORM FOR GENERAL BID**

To the Massachusetts Port Authority:

The undersigned hereby declares to have carefully examined the annexed form of Contract, Specifications, and Drawings therein referred to and also the site upon which the projected work is to be performed.

- A. The undersigned proposes to furnish all labor and materials required for the construction of the Massachusetts Port Authority Contract No. \*\*[CONTRACT NO.]\*\* for \*\*[TITLE AND LOCATION IN CAPS]\*\*\*\* for the Massachusetts Port Authority in accordance with the Drawings and Specifications prepared by \*\*[CONSULTANT NAME AND ADDRESS IN CAPS]\*\*\*\* for the Contract Price specified below, subject to additions and deductions according to the terms of the Specifications.

If the Bidder is a foreign corporation, it agrees, in case this Proposal is accepted, to comply with the Provisions of the General Laws, Chapter 181, Sections 3 and 5 and acts in amendment thereof and addition thereto before the time for execution of the Contract, as hereinafter provided occurs.

Accompanying this Proposal is a bid deposit in the amount of 5 percent of the value of the bid which shall become the property of the Massachusetts Port Authority if, in case this Proposal shall be accepted by the said Authority, the undersigned shall fail to comply with the statutes as hereinbefore specified, if it is a foreign corporation, or in any event fail to execute the Contract with, and give a bond to, said Authority, according to the requirements of the Notice to Contractors in the form annexed to said form of Contract, within the time hereinafter specified.

The undersigned also hereby declares to be the only person interested in this Proposal; that it is made without any connection with any other person making any bid for the same work; that no person acting for, or employed by the Massachusetts Port Authority is directly or indirectly interested in this Proposal, or in any Contract which may be made under it, or in expected profits to arise therefrom; and it is made without directly or indirectly influencing or attempting to influence any other person or corporation to bid or to refrain from bidding or to influence the amount of the bid of any other person or corporation; and that this Proposal is made in good faith, without collusion or connection with any other person bidding for the same work; and that this Proposal is made with distinct reference and relation to the Bid Documents prepared for this case, and herein mentioned. The undersigned declares that in regard to the conditions affecting the work to be done and the labor and materials needed, this Proposal is based solely on the Bidder's own investigation and research and not in reliance upon any drawings, surveys, measurements, dimensions, calculations, estimates, borings, or representations of any employee, officer, or agent of the Authority.

B. This bid includes Addenda numbered \_\_\_\_\_.

C. The proposed Contract Price is

\_\_\_\_\_ Dollars  
(amount in words)

(\$ \_\_\_\_\_).  
(amount in figures)

D. The subdivision of the proposed Contract Price is as follows:

Item 1: The work of the General Contractor, being all work other than that covered by Item 2:

Total amount of Item 1 is:

\_\_\_\_\_ Dollars  
(amount in words)

(\$ \_\_\_\_\_).  
(amount in figures)

Item 2. Sub-bids as follows:

Sub-Trade	Sub-Bidder	Amount	Bonds Required	
			Yes	No

Total amount Item 2 is:

\_\_\_\_\_ dollars  
(amount in words)

(\$ \_\_\_\_\_).  
(amount in figures)

The undersigned agrees that each of the above-named sub-bidders will be used for the work indicated at the amount stated, unless a substitution is made. The undersigned further agrees to pay the premiums for the performance and payment bonds furnished by sub-bidders as requested herein and that all of the cost of all such premiums is included in the amount set forth in Item 1 of this bid.

The undersigned agrees that, if selected as General Contractor, will promptly confer with the Authority on the question of sub-bidders; and that the Authority may substitute for any sub-bid listed above a sub-bid duly filed with the Authority by another sub-bidder for the sub-trade against whose standing and ability the undersigned makes no objection; and that the undersigned will use all such finally selected sub-bidders at the amounts named in their respective sub-bids and be in every way as responsible for them and their work as if they had been originally named in this general bid, the total contract price being adjusted to conform thereto.

- E. The undersigned agrees that, if he/she is selected as Contractor, he/she will within 5 days, Saturdays, Sundays, and legal holidays excluded, after presentation thereof by the Authority, execute the Contract in accordance with the terms of this bid and furnish a performance bond and a payment bond for the full amount of the Contract Price, each with a Surety company qualified to do business under the laws of the Commonwealth and satisfactory to the Authority, the premiums for which are to be paid by the Contractor and are included in the Contract Price.
- F. The bidder hereby certifies that in the event he/she is awarded the Contract he/she shall comply with the minority manpower ratio and all specific action steps contained in the Massachusetts Port Authority Equal Employment Opportunity Anti-Discrimination and Affirmative Action Programs as required by the Specifications, including compliance with the minority contractor provisions specified therein. The Contractor receiving the award of the contract shall be required to obtain from each of the subcontractors and submit same to the Authority prior to the performance of any work under said contract a certificate by said subcontractor, regardless of tier, that it will comply with the minority manpower ratio and specific affirmative action steps contained in said programs.

The undersigned hereby certifies that he/she is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on this work.

The undersigned further certifies under penalties of perjury that the said undersigned is not presently debarred from doing public construction work in the Commonwealth under the provisions of section twenty-nine F of chapter twenty-nine, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder.

\_\_\_\_\_  
Date:

\_\_\_\_\_  
(Name of General Bidder)

\_\_\_\_\_  
By:

\_\_\_\_\_  
(Printed Name as Signed Above)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Business Address)

\_\_\_\_\_  
City and State)

\_\_\_\_\_  
(Telephone Number)

Bids shall be for the complete work as specified, and the Contractor shall be selected on the basis of such bids. Every bid which is not accompanied by a bid deposit as prescribed by the Notice to Contractors, or which is on a form not completely filled in, or which is incomplete, conditional, or obscure, or which contains any addition not called for, shall be invalid, and the Authority shall reject every such bid.

Note: If the bidder is a corporation, indicate state of incorporation; if a partnership, give full names and addresses of all partners; and if an individual, give residential address if different from business address. Use the following spaces:

If a Corporation:

Incorporated in what state: \_\_\_\_\_

President: \_\_\_\_\_

Treasurer: \_\_\_\_\_

Secretary: \_\_\_\_\_

If a Partnership: (Name ALL Partners)

Name of Partner: \_\_\_\_\_

Residence: \_\_\_\_\_

Name of Partner: \_\_\_\_\_

Residence: \_\_\_\_\_

If an Individual:

Name: \_\_\_\_\_

Residence: \_\_\_\_\_

If an Individual doing business under a firm name:

Name of Firm: \_\_\_\_\_

Name of Individual: \_\_\_\_\_

Business Address: \_\_\_\_\_

Residence: \_\_\_\_\_

The bidder will give below the name and address of the Surety Company who will sign the bonds.

\_\_\_\_\_  
\_\_\_\_\_

**MASSACHUSETTS PORT AUTHORITY**

**DISADVANTAGED BUSINESS ENTERPRISE (DBE) PARTICIPATION  
LETTER OF INTENT/SCHEDULE OF PARTICIPATION**

(Required of low bidder within five working days of Bid Opening)

MPA Contract No.: \_\_\_\_\_

MPA Contract Title: \_\_\_\_\_

To: \_\_\_\_\_  
(Name of Contractor)

From: \_\_\_\_\_  
(Name of DBE Subcontractor\*)

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone No.: \_\_\_\_\_

1. My company will perform work in connection with the above referenced contract as: (check one)

- ☐ an individual      ☐ a partnership      ☐ a corporation  
☐ a joint venture with \_\_\_\_\_  
☐ other (explain) \_\_\_\_\_

2. The undersigned affirms that s/he is a duly authorized official representing the proposed disadvantaged business enterprise and affirms that its certification has not expired nor been revoked, nor has there been any change in the status of said disadvantaged business enterprise.  
\*\* A copy of certification letter is attached.

3. If you are awarded the Contract, my company intends to enter into a subcontract with your firm to perform the work described on the following sheet for the prices indicated.

\* If more than one DBE firm is to be utilized on the contract, use a separate form for each firm.

\*\* Certification must be completed at the time the above contract was advertised and prior to submission of the Schedule of Participation See contract documents and "Instructions to Bidder".



**DESCRIPTION OF WORK**

DBE must fill in DESCRIPTION OF WORK TO BE PERFORMED by trade and numbered section of the Contract Specifications.

<b>Description of Work to be Performed or Materials to be Supplied</b>	<b>Item No./Section of Contract Spec.</b>	<b>Quantity</b>

<b>Unit Price</b>	<b>Amount for Item</b>	<b>Amount to be Credited to DBE Total</b>

Credit to DBE Contractors (total from above) \$ \_\_\_\_\_

Proposed Contract Price (from Bid Proposal Paragraph C) \$ \_\_\_\_\_

TOTAL PRICE TO DBE CONTRACTORS FOR WORK PERFORMED UNDER THIS CONTRACT IS \_\_\_\_\_% OF THE PROPOSED CONTRACT PRICE. NOTE TO BIDDER: IN ORDER TO BE RESPONSIVE AND ELIGIBLE, THIS PERCENTAGE SHALL NOT BE LESS THAN \_\_\_\_\_%.

\_\_\_\_\_  
(Name of DBE Contractor)

By: \_\_\_\_\_  
(Signed, Name and Title) Date

\_\_\_\_\_  
Address City State/Zip

AGREED \_\_\_\_\_  
(Name of General Contractor)

By: \_\_\_\_\_  
Signed, Name and Title Date

\*\*\* Enter Amount in accordance with Div. II-A, Paragraph C.8

**STATEMENT REQUIRED BY 41 CFR SECTION 60-1.7(b)**

The Bidder has/has not (circle one) developed and filed at each establishment affirmative action programs pursuant to Section 60-2 of the regulations.

The Bidder has/has not (circle one) participated in a previous contract subject to the equal opportunity clause prescribed by Executive Order 10925, or Executive Order 11246, or Executive Order 11114.

The Bidder has/has not (circle one) submitted all compliance reports in connection with any such contract due under the applicable filing requirements; and that representations indicating submission of required compliance reports signed by proposed subcontractors will be obtained prior to award of subcontracts.

If the Bidder has participated in a previous contract subject to the equal opportunity clause and has not submitted compliance reports due under applicable filing requirements, the Bidder shall submit a compliance report on Standard Form 100, "Employee Information Report EE0-1," prior to the award of contract.

Dated: \_\_\_\_\_

\_\_\_\_\_  
(Legal Name of Person, Firm, or Corporation)

By: \_\_\_\_\_

\_\_\_\_\_  
(Title)

**END OF FORM FOR GENERAL BID**

C:\ADDIE\WORDFILE\FORMS\APRIL MANUAL\EXHIBIT 15 PAGES 3 TO END.DOC

**FORM FOR SUB-BID****TO ALL GENERAL BIDDERS EXCEPT THOSE EXCLUDED:**

- A. The undersigned proposes to furnish all labor and materials required for completing, in accordance with the hereinafter described Plans, Specifications, and Addenda, for the Work specified in SECTION NO. \_\_\_\_\_ SUB-TRADE \_\_\_\_\_ of the Specifications and in any Plans specified in such sections, prepared by \*\*[CONSULTANT NAME AND ADDRESS IN CAPS]\*\* for Massachusetts Port Authority Contract No. \*\*[CONTRACT NO.]\*\* for \*\*[TITLE AND LOCATION IN CAPS]\*\*, for the contract sum of \_\_\_\_\_ dollars (\$ \_\_\_\_\_).
- B. This sub-bid includes Addenda numbered: \_\_\_\_\_
- C. This sub-bid
- ☐ may be used by any General Bidder except:
- \_\_\_\_\_
- ☐ may only be used by the following General Bidders:
- \_\_\_\_\_
- (To exclude General Bidders, insert "X" in one box only and fill in the blank following that box. Do not answer C if no General Bidders are excluded.)
- D. The undersigned agrees that, if selected as a sub-bidder, will within five (5) days, Saturdays, Sundays, and legal holidays excluded, after the presentation of a subcontract by the General Bidders selected as the General Contractor, execute with such General Bidder a subcontract in accordance with the terms of this sub-bid and contingent upon the execution of the General Contract; and, if required to do so in the General Bid by such General Bidder who shall pay the premiums therefore, furnish a Performance and Payment Bond of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the Authority, in the full sum of the subcontract price.
- E. The names of all persons, firms, and corporations furnishing to the undersigned labor, or labor and materials, for the class or classes or part thereof of the work for which the provisions of the section of the Specifications for the sub-trade require a listing in this paragraph (including the undersigned if customarily furnished by persons on his own payroll and in the absence of a contrary provision in the Specifications), the name of each class of work or part thereof and the bid price for each class of work or part thereof are:

Name	Class of Work	Bid Price

(Do not give bid price for any class or part thereof furnished by the undersigned.)

- F. The undersigned agrees that the above list of bids to the undersigned represents bona fide bids based on the hereinbefore described Plans, Specifications, and Addenda, and that, if the undersigned is awarded the Contract, they will be used for the work indicated at the amounts stated, if satisfactory to the Authority.
- G. The undersigned further agrees to be bound to the General Contractor by the terms of the hereinbefore described Plans, Specifications (including all general conditions stated therein), and Addenda, and to assure toward him all the obligations and responsibilities that he, by those documents, assumes toward the Massachusetts Port Authority.
- H. The undersigned offers the following information as evidence of his qualifications to perform the work as bid upon according to all the requirements of the Plans and Specifications.
1. Have been in business under present business name for \_\_\_\_\_ years.
  2. Ever fail to complete any work awarded? \_\_\_\_\_
  3. List one or more recent buildings, with names of General Contractors and Engineer, on which you served as subcontractor for work of similar character as required for the above-named building.

Building	Architect	General Contractor	Amount of Contract

4. Bank Reference: \_\_\_\_\_

5. Disadvantaged Business Enterprise Status (check appropriate boxes if applicable)

SOMWBA Certified

☐ MBE

☐ WBE

Massport Certified

☐ MBE

☐ WBE

- I. The bidder hereby certifies that s/he shall comply with the minority manpower ratio and specific action steps contained in the Massachusetts Port Authority Equal Employment Opportunities, Anti-Discrimination, and Affirmative Action Program, as contained in the Specifications, including

compliance with the minority contractor provision specified therein.

The undersigned hereby certifies that s/he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the Work.

The undersigned further certifies under penalties of perjury that this bid is in all respects bona fide, fair, and made without collusion or fraud with any other person. As used in this subsection, the word "person" shall mean any natural person, joint venture, partnership, corporation, or other business or legal entity.

The undersigned further certifies under penalties of perjury that the said undersigned is not presently debarred from doing public construction work in the Commonwealth under the provisions of section twenty-nine F of chapter twenty-nine, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder.

Bids shall be for the complete work as specified, and the Contractor shall be selected on the basis of such bids. Every bid which is not accompanied by a bid deposit as prescribed by the Notice to Contractors, or which is on a form not completely filled in, or which is incomplete, conditional, or obscure, or which contains any addition not called for, shall be invalid, and the Authority shall reject every such bid.

- END OF FORM FOR SUB-BID -

(Filed Sub-Bid Sample)

## SECTION 15500

### HEATING, VENTILATING AND AIR CONDITIONING

(Filed Sub-Bid Required)

#### PART 1 GENERAL

##### 1.01 RELATED DOCUMENTS

- A. THE GENERAL CONDITIONS, DIVISION I, and SPECIAL PROVISIONS, DIVISION II, and SAMPLE CONTRACT FORMS, DIVISION IV are hereby made part of this Section.
- B. Examine all Drawings and all Sections of the Specifications for requirements and provisions affecting the work of this Section.
- C. Coordinate the work required with the activities of other Contractors at the site. Cooperate with other site Contractors to assure steady progress of all work being performed in the area.
- D. Time, Manner and Requirements for Submitting Sub-Bids
  - 1. Sub-bids shall be for the complete work under this Section and shall be filed in a sealed envelope and will be received by the Massachusetts Port Authority, Office of the Director of Capital Programs, Logan Office Center, Suite 209S, One Harborside Drive, East Boston, MA 02128, until the time stipulated in the NOTICE TO CONTRACTORS. Sub-bids will be immediately opened and read publicly. The following should appear on the upper left-hand corner of the envelope:
    - a. Name of Sub Bidder
    - b. PROJECT - MPA No. XXXX  
Project Name:  
Project Location:
    - c. Sub-Bid for Section \_\_\_\_\_ - \_\_\_\_\_
  - 2. Every sub-bid for work under this Section shall be on a form furnished by the Massachusetts Port Authority, as required by Section 44F of Chapter 149 of the General Laws, as amended. Sub-bid forms may be obtained at the Office of the Director of Capital Programs, Massachusetts Port Authority.
  - 3. All sub-bids shall be accomplished by a bid bond, or cash, or certified check on, or a treasurer's or cashier's check issued by a responsible bank or trust company, made payable to the Massachusetts Port Authority in the amount specified in NOTICE TO CONTRACTORS. A sub-bid accompanied by any other form of bid deposit than those

specified will be rejected.

4. Sub-bidders' attention is directed to Massachusetts General Laws Chapter 149, Section 44F as amended, which provides in part as follows:
  - a. Each sub-bidder shall list in Paragraph E of the "Form for Sub-Bids" the name and bid price of each person, firm or corporation performing each class of work or part thereof for which (the Section of the Specifications for that sub-trade) requires such listing; provided that, in the absence of a contrary provision in the Specifications, any sub-bidder may, without listing any bid price, list his own name in said Paragraph E for any such class of work or part thereof and perform that work with persons on his own payroll; if such sub-bidder, after sub-bid openings, shows to the satisfaction of the awarding authority that he does customarily perform such class of work or the part thereof with person son his own payroll and is qualified to do so. This Section of the Specifications requires that the following class(es) of work shall be listed in Paragraph E under the conditions indicated herein.

CLASS(ES) OF WORK

REFERENCE ARTICLE(S)

Example:      Temperature Controls                      2.25

*(Note to Designer: Paragraphs 1.01, A, B and C are mandatory, except as otherwise noted. Titles listed in this sample section format represent categories of articles used in current specification practice. Do not use titles in applicable to the relevant section, but maintain those used in the sequence shown.)*

5. Sub-Sub Bid Requirements: *[Note to Designer: If Sub-Sub-Bids are not required, omit Subparagraph 1 and insert: (NONE REQUIRED UNDER THIS SECTION.)]*

# Description of Filed Sub-Bid System

General Contractors on major construction projects typically use subcontractors to perform specialized aspects of the work. Massachusetts General Laws require what is known as the “filed sub-bid” system for selecting certain subcontractors on most public building construction projects.

The Law requires that contractors submit construction bids in two phases. First, subcontractors must submit their bids to the Awarding Authority, which will compile a list of all sub-bids received. The Awarding Authority will send the list to all interested general contractors. Interested contractors will then need to submit their bid including any filed sub-bidders that will be used on the work.

A subcontractor must be selected from the Authority’s list of filed sub-bidders when the following three conditions are met:

- (1) The project is being bid under the C149 bid laws.
- (2) The subcontractor’s work falls under one of the categories listed on page III-1.
- (3) The estimated cost of the subcontract is greater than \$10,000.

The following paragraphs describe the filed sub-bid system procedure that contractors should follow when they wish to file a bid {G.L.C149, 44F}:

1. The categories for which filed sub-bids are required must be included in the public notice.
2. Subcontractors must submit sub-bids for the work in each filed sub-bid category directly to the Awarding Authority, using the standard bid form. Filed sub-bids are subject to the same requirement for bid deposits as are general bids.
3. Subcontractors may submit unrestricted or restricted sub-bids. Unrestricted sub-bids allow any general contractor to use the subcontractor’s sub-bids; restricted sub-bids only allow certain contractors to use them.
4. The sub-bids are publicly opened and read. Within 2 working days, the awarding authority must reject any sub-bids that do not have a bid deposit or that do not otherwise conform to the bidding requirements. A list of the sub-bidders, and their sub-bid amounts, is then mailed to all those who have received the bidding documents for the general bids. This list must be sent out at least two (2) working days before the general bids are due.
5. Each General Contractor must select, in each sub-bid category, the subcontractor it wishes to use (provided he/she is not restricted by the subcontractor). The General Contractor must list in its general bid the names of the selected subcontractors and the respective sub-bid amounts. General Contractors are not required to take the lowest sub-bid in each category.

**Note:** A sub-bid must be rejected if it is on a form which is incomplete, conditional, obscure, or contains additions not called for in the plans and specifications; if there is no bid deposit; or if the sub-bidder has failed to acknowledge all addenda to the bid documents. Failure to reject such a sub-bid, however, does not validate it nor preclude the Awarding Authority from later rejecting it.



(SAMPLE ADDENDUM)

**MASSACHUSETTS PORT AUTHORITY  
CAPITAL PROGRAMS DEPARTMENT  
LOGAN OFFICE CENTER - SUITE 209S  
ONE HARBORSIDE DRIVE  
BOSTON, MASSACHUSETTS 02128-2909**

**MPA PROJECT NO.(insert number)  
(title in caps)  
(location in caps)  
(city, state and zip in caps)**

**ADDENDUM NO. XX  
(date in caps)**

The attention of Bidders submitting proposals for the subject Contract is called to the following Addendum to the project Plans and Specifications. The revisions set forth herein, whether of omission, addition or substitution, are to be included in and form a part of the Proposal submitted. THE NUMBER OF THIS ADDENDUM (NO. 1) MUST BE ENTERED IN THE SPACE PROVIDED ON PAGE P-? OF THE PROPOSAL FORM FOR GENERAL BIDS. (Note: if Filed Sub-bids are required, also add the following language here) AND ON PAGE P-?? OF THE FORM FOR SUB-BIDS.

Notice to All Bidders:

SPECIFICATIONS:

Item 1.

DRAWINGS:

Item 1.

Item 2.

**END OF ADDENDUM NO. 1**

**MASSACHUSETTS PORT AUTHORITY  
NAME  
EXECUTIVE DIRECTOR AND CEO**

**MASSACHUSETTS PORT AUTHORITY  
DEPARTMENT OF PUBLIC SAFETY**

**CERTIFICATION  
CONSTRUCTION CONTROL  
REGISTERED ARCHITECTURAL AND PROFESSIONAL ENGINEERING SERVICES**

In accordance with Section 116.0 of the Massachusetts Building Code, 780 CMR, 6th Edition

I, \_\_\_\_\_ being a registered architect or registered  
(Print)  
professional engineer certify that I shall perform the necessary professional services for the portion of the work  
(discipline) for which I am **directly responsible** as identified in Section 116.2.2.

1. Review for conformance to the design concept, shop drawings, samples and other submittals, which are submitted by the contractor in accordance with the requirements of the construction control documents.
2. Review and approval of the quality control procedures for all code-required controlled materials.
3. Be present at intervals appropriate to the stage of construction to become, generally familiar with the progress and quality of the work and to determine, in general, if the work is being performed in a manner consistent with the construction documents.

Pursuant to Section 116.4, I shall submit periodically, progress reports together with pertinent comments as may be required by the State Building Inspector.

At completion of the construction and prior to the request of a Certificate of Occupancy, I shall file a final report to the State Building Inspector that the work has been performed in accordance with the approved plans and 780 CMR and all requirements of Section 120.0, "Certificate of Occupancy" have been satisfied.

Project: \_\_\_\_\_

Location: \_\_\_\_\_

Date on Plans and Specifications submitted for approval and issuance of the Building Permit: \_\_\_\_\_

Addendums/Revisions Date(s): \_\_\_\_\_

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Discipline - Area of Responsibility  
M.G.L. Chapter 112, 231CMR, 250 CMR

\_\_\_\_\_  
Architect/Professional Engineer (Original) Seal

\_\_\_\_\_  
Date

# Narrative Reports – As Regulated by 780 CMR, Section 903.0

## 903.1.1 - FIRE PROTECTION CONSTRUCTION DOCUMENTS

- a. Basis (methodology) of design for the protection of the occupancy and hazard for compliance with 780 CMR and applicable NFPA Standards, in the form of a narrative report.
- b. Sequence of operation of all fire protection systems and operation in the form of a narrative report.
- c. Testing criteria to be used for final system acceptance in the form of a narrative report.

A Narrative Report is a written summary description of the building or structures and all applicable fire protection systems and related operational features. Explains the analogy and methodology used by the designers in the design of the systems for the protection of the building occupants and emergency response personnel for all required and non-required fire protection systems.

### **APPLICABILITY**

Required fire protection system installed in new buildings or structures, required fire protection system modification or addition to an existing system, non-required fire protection systems regulated by regulatory codes other than 780 CMR or voluntarily installed require approval, permits and inspections by building and fire department officials.

The enforcement provision of 780 CMR require that a narrative report be submitted as part of the plan review and prior to the issuance of building permit. Administratively depending on the project size, scope and complexity, the code official should make a reasonable decision as to require a full comprehensive or partial report.

### **PURPOSE**

Expedites the plan review and inspection process by building and fire officials. It is maintained on file for use at time of final inspection and periodic reviews during future field inspections. Is referenced to insure that all future modifications, alterations, addition or deletion to the original systems are current and that the original system's protection and required system performance are not compromised or have been altered without building or fire official prior review.

Building owners benefit by knowing how their building's fire protection and life safety systems work and provides procedures and method for testing and maintenance.

**DEVELOPMENT AND SUBMISSION FORMAT**

Prepared by a qualified, identified individual who has “taken charge” in the development of an entire coordinated “report” which includes all information regarding the design basis, sequence of operation and testing criteria associated with all required or non-required fire protection systems set forth by applicable Laws, Regulations and Standards.

The “report” is to be submitted with plans and specifications for review and approval by code officials prior to the issuance of a building permit. The Narrative Report should be written in a clear conversational format. The installation specification is not considered a Narrative Report. The Narrative Report is a stand-alone document, 8-1/2” x 11” for filing and ease of use by code officials.

**COMMENTARY**

The promulgation of the State Building Code is written in a way to require uniformity for all buildings and structures regardless of local conditions. The intent of the codes can be subjective and interpretative by both designers and code officials, uniformity is not always applied.

The Narrative Report attempts to clarify to the code official the designer’s intent and his interpretation of the code. The code official may agree or disagree with the designer’s interpretation.

Historically the requirements for fire protection systems have become site specific and building code requirements not uniformly enforced. The size of the community, fire department staffing, fire department equipment availability and suppression tactics established by the local fire department have affected the uniformity of enforcement. Site specific requirements less than or more than the building code requires may have reasonable intent, however, this type of enforcement in some cases has proven to be controversial in the applicability of code uniformity.

The Narrative Report can be a valuable instrument when accurately prepared, it will establish a line of communication between the designer and the code official resulting in what the building code mandates, uniformity and consensus in the interpretation of the codes

This portion of the narrative report should be broken down into the following six sections

### 903.1.1 (1.a) BASIS (METHODOLOGY) OF DESIGN

#### **SECTION 1 - Building Description**

This section identifies specific features of a building that contributes to the overall understanding of the fire protection systems and features required to be identified in the Narrative Report

- a) Building “Use” Group
- b) Total square footage of building
- c) Building height
- d) Number of floors above grade
- e) Number of floors below grade
- f) Square footage per floor
- g) Type(s) of occupancies within the building
- h) Type(s) of construction
- i) Hazardous material usage and storage
- j) High storage of commodities within a building usually over 12 ft.
- k) Site access arrangement for emergency response vehicles

#### **SECTION 2 - Applicable Laws, Regulations and Standards**

This section identifies regulatory codes and standards that may have an impact in the design and plan approval of the required and the non-required fire protection systems as per the requirements of 780 CMR, requiring the preparer of the Narrative Report to have had conducted a comprehensive code research

- a) 780 CMR code sections “Fire Protection System Requirements”
- b) NFPA Standards and Edition used for design of each specific fire protection system
- c) Applicability of Sections of M.G.L., Chapter 148, “Fire Prevention”
- d) Applicability of Sections of 527 CMR “Fire Prevention Regulations”
- e) Applicability of “approved” local by-laws, or ordinances
- f) Applicability of specialized codes (plumbing, elevator, electrical, architectural access board)
- g) Applicability of Federal Laws (OSHA, ADA, etc.)

**SECTION 3 - Design responsibility for fire protection systems**

This section identifies the accountability for a specific fire-protection system design and the accountability for all other integrated fire protection systems design

- a) The professional engineer (PE) fully designs (complete layout and calculations) and specifies the fire protection system or systems to be installed, reviews and approves the installing contractor's shop drawings. The PE is considered the engineer of record and certifies system installation for code compliance at completion
- b) The professional engineer (PE) provides a partial design and specifies the design criteria to be used by the installing contractor who finalizes the system layout, provides calculations to confirm the design criteria. The PE reviews and approves the installing contractor's final layout and calculations. The PE is considered the engineer of record and certifies system installation for code compliance at completion
- c) Design-build, the installing contractor completely designs and specifies (develops a full system layout, design criteria and calculations), installs the system and certifies system installation for code compliance at completion. There may be a professional engineer involved but not necessarily

Whichever above method is selected, the project requires an engineer of record to assume responsibility for the coordination of each specific fire protection system requiring integration, forming an entire building life safety system.

**SECTION 4 - Fire protection systems to be installed**

This section identifies key performance design features for each specific fire protection system

- a) Fire mains and hydrants
- b) Automatic sprinkler systems and components
- c) Standpipe systems and components
- d) Fire alarm systems and components
- e) Automatic fire extinguishing systems
- f) Manual suppression systems
- g) Smoke control/management systems
- h) Kitchen cooking equipment and exhaust systems
- I) Emergency power equipment
- j) Hazardous material monitoring equipment

The description (specific features) for the above fire protection systems shall also indicate if the system is:

- Required by Regulations, Law or “approved” By-Law or Ordinance
- Non-required, developer provides voluntarily
- A complete new system
- An addition or expansion to existing system
- A modification/repair to existing system
- Level of protection to be provided, 100% or partial protection or exempt by regulatory code

#### **SECTION 5 - Features used in the design methodology**

This section identifies the designer’s intent in the overall design and criteria development either of a required or of a non-required system.

- a) Building occupant notification and evacuation procedures
- b) Emergency response personnel, site and systems features
- c) Safeguards, fire prevention and emergency procedures during construction
- d) Method for future testing and maintenance of systems and documentation

#### **SECTION 6 - Special consideration and description**

This section identifies the designers’ intent to deviate from prescriptive requirements of regulatory codes and standards with alternative methods

- a) Application of “performance-base design” in lieu of prescriptive code requirement
- b) Interpretation/clarification between designer and code officials
- c) Waiver or variance sought through the regulatory appeal process

#### **903. 1.1 - (1.b) SEQUENCE OF OPERATION**

This portion of the narrative report is a difficult section to write as it entails the specific operation of system devices and equipment and their related integration

**SECTION 1**

- a) An operational description of either a system or specific devices within a system and the “resulting action” associated with the operation of the system or specific devices
- b) The operational description shall include all interconnected (integrated) fire protection systems and devices required or non-required forming an entire building life safety system
- c) All signage indicating equipment location, operational and design features and certified documents attesting to system installation integrity

This section of the narrative report can be brief as in a simple system such as a one-story 15,000 sq.-ft. mercantile building with only a sprinkler system and fire alarm notification device. Or complex, such as in a 25-story high-rise hotel with fire pumps, emergency generator, fire alarm and sprinkler zones, automatic standpipes, automatic voice and manual evacuation signals, smoke management system, automatic elevator recall, special extinguishing systems, remote annunciation, automatic locking devices, alarm retransmission methods and emergency response procedures

The sequence of operation of a building life safety system, particularly with complicated systems must be reviewed and understood by code officials. A team approach should be used by developers, designers, equipment suppliers, and contractors including code officials to clearly describe and understand the proper operation of the integrated systems

When a complex system is proposed, the initial narrative report of the “sequence of operation” should be viewed only as a draft. At various stages of installation modifications maybe be made. The designers should submit a final narrative for approval by the code officials prior to witnessing a system acceptance.

Communication between the developers and code officials is an important element particularly in this phase, as the building codes and the NFPA Standards tend to be flexible and interpretative

**903. 1.1 - (1.c) TESTING CRITERIA**

This portion of the narrative report should be broken down into the following three sections

**SECTION 1 - Testing criteria**

This section identifies the individual in charge who will coordinate the final acceptance testing and witnessed by appropriate code officials

***Personnel***

- a) Identification of professional in charge for setting up and coordinating all testing



- b) Method of verification and confirmation by professional in charge that all fire protection systems, equipment and devices have been individually tested and tested as an entire system when specific systems are integrated to form a building life safety system
- c) Method of coordination by professional in charge of all contractors, equipment distributors and code officials required to perform and witness all testing, testing dates and times, notification to public utilities, personnel required to perform all required testing as a system or individual system component testing

## **SECTION 2 - Equipment and tools**

This section will identify the necessary equipment available on site at time of witnessing the operational features of the fire protection systems that require validation from code officials and expedite the acceptance testing

- a) Identification of equipment and procedures to be used to verify system performance

Example:

Manufacturer's instructions  
Smoke machines  
Smoke candles  
Sound meters  
Fire hoses, nozzles  
Flow measuring devices  
Gauges  
Voltage meters  
Magnets  
Communication radios  
Fire department equipment  
Special tools  
Notification announcements

## **SECTION 3 - Approval Requirements**

This section identifies all the close-out documents for the code officials' departmental records

- a) Establish method of approval required (verbal or written) from code official if system satisfies all operational code compliance requirements
- b) Establish method of remedial action when a system or portion of a system fails to operate satisfactorily
- c) Documentation to be submitted to code officials at completion verifying that systems are in compliance with all laws, regulations and standards and pre-approved narrative reports
- d) Documentation to be submitted to code officials listing names, addresses and telephone

numbers of personnel for emergency notification

***Definitions***

**Fire Protection Systems** - Automatic sprinkler systems, fire detection system, fire alarm notification system, smoke control system, kitchen hood suppression system, etc.

**Building Life Safety System** - A combination of fire protection systems and other building fire protection features such as automatic door closers, emergency generators, emergency egress lighting, elevator systems, etc., interconnected or integrated with multiple fire protection systems functioning simultaneously when activated.

### **Suggested Agenda for the Preconstruction Conference**

1. Request that each attendee sign its name, company, business telephone number and emergency (24-hour) telephone number on the attendance list form, attached. Make copies of this list and give one to each attendee.
2. Request that each attendee make a self-introduction: name, company, and position on this project team.
3. An introductory statement by Massport's Project Manager stressing cooperation between all parties (Massport, Facility Representative, Consultant, and General Contractor) is an appropriate first step for developing the team effort necessary for a successful project. If all project participants work together in a team effort, a quality product can be produced within the contract time and dollar constraints and it can clearly be a "win-win" project.
4. The Project Manager should reinforce the fact that he/she is the owner's representative for the project and that (a) all correspondence and submittals to Massport will be directed to the PM, (b) the General Contractor will respond to directions/changes to the plans and specs only from the PM or its representative, designated in writing.
5. Contract Starting Date/No. of Contract Days/Contract Completion Date
6. Date of Notice to Proceed
7. Construction Schedule
  - (a) Emphasize that accurate scheduling and constant monitoring of the schedule by all parties are key ingredients to "getting the project in" on time.
  - (b) Detail the contract schedule requirements per the specifications.
  - (c) Emphasize that the General Contractor is responsible for the scheduling of the subcontractors and this will require close coordination by the General Contractor.
  - (d) The success of any schedule depends in part upon prompt preparation and expeditious processing of all required submittals; schedule should identify the submittal process and reflect the time parameters for key items.
  - (e) Critical construction operations, the critical path, should be identified in the scheduling.

Ask when you will receive the contractor's schedule and give an idea of how long it will take you to approve or disapprove it. (Goal for review is less than one week).
8. Like safety, quality and schedule, COST CONTROL is essential. The goal is to complete the project at or less than the bid amount.
9. Liquidated Damages
10. Explain that if the GC sees a way in which Massport can save money, e.g. do the same job at less cost by making a slight modification to the design, the GC should suggest it to you. As Massport's representative, you can analyze the proposal, estimate the savings, negotiate with the General Contractor and attempt to reach an agreement in which both

parties will benefit. Then a change order could be prepared for a credit, which would be less than the total savings. In other words, the General Contractor can monetarily benefit by sharing in the savings and, therefore, has incentive to make constructive cost saving suggestions.

11. Present to the General Contractor the number of copies of plans and specifications as required in the "Special Provisions".
12. Submittals (Shop Drawings and Certificates)
  - (a) Identify the number of copies to be submitted by the General Contractor. This number will depend on how many copies the General Contractor and the Engineer may want returned to them.
  - (b) If subcontractors are involved in the project, their submittals should be sent to the General Contractor, who will, in turn, submit them to the engineer.
  - (c) Discuss turnaround time for submittal review. (How long will review take?)
13. The General Contractor and all of its subcontractors will pay the Minimum Wage Rates and shall submit to their respective employees their wage rates, which will include base pay, fringe benefits, insurance, etc.
14. Certified Payroll Report (Exhibit 36B) may be presented by the Compliance Manager.
15. Non-Discrimination and Affirmative Action (may be presented by the Compliance Manager).
  - (a) Compliance Requirements
    - (1) Minority Work Force Ratio: \_\_\_\_\_%
    - (2) Weekly Workforce Utilization Reports (Exhibit 36C)
  - (b) MBE Requirements
  - (c) WBE Requirements
16. Give the General Contractor the Partial Payment Requisition (Pay Estimate) Forms, and the Final Requisition Forms. Tell the contractor the location code to use for this project at the top of the Pay Requisition Form. The Contractor must submit three (3) originally signed copies of the Payment Requisitions.
17. The General Contractor must submit a schedule of payment and breakdown for Lump Sum items at start of project.
18. Sales Tax Exemption Number: E046-006-4-29
19. Establish Job (Progress) Meetings
  - (a) Location of Meeting
  - (b) Frequency (weekly, biweekly, etc.) and time

- 
20. Site Office and Storage Trailers (Camp Site)
    - (a) Coordinate location with facility managers
    - (b) Post wage rates and Non-Discrimination information at this location.
  21. Restriction to the Use of Grounds
    - (a) Emphasize that the work is limited to the work site as shown.
    - (b) Emphasize that the location of the project is at an operating facility and close
    - (c) Coordination with the facility managers will be necessary to insure that facility operations and tenants are not unduly impacted.
  22. Cooperation with Other Contractors
    - (a) Emphasize the need for working in harmony with other, nearby contractors.
  23. Safety - emphasize the need for a safe environment for all people, workers and the public, in the area; undue risks should not be taken. Explain the hardhat requirement. Ask the Massport Fire Department representative to:
    - (a) Say a few words concerning public safety considerations that the General Contractor should especially be alert to, e.g. burning permits,
    - (b) Explain the notification actions that should be taken by the General Contractor in case of any type of accident, which results in personal injury or property damage.
  24. Sanitation and Environmental Requirements - the General Contractor should be reminded that a neat and clean job site and campsite is important to Massport as well as the General Contractor. Hazardous Waste or Hazardous Materials are not to be stored on Authority property. If necessary for construction to proceed smoothly, the contractor may seek permission to store hazardous materials on Authority property. Such a request shall be made through the Engineer to the Project Manager. If approved by the Chief of Environmental Management, the Logan Fire-Rescue Department and the Facility, the Contractor must follow all the requirements in the approval. (Ask the Environmental Manager to make comments, as appropriate).
  25. Select a location for the project sign.
  26. Security:
    - (a) The General Contractor is responsible for the security of his materials and equipment.
    - (b) Some potential work locations are within restricted or secured areas, e.g. the Logan Airfield Operations Area (AOA). Contractors must apply for and receive security badges before they can enter secured areas. It generally takes several weeks to get a security pass issued.
  27. Underground Utilities: Warn the General Contractor to be careful during all excavation operations.

28. Project Guarantees - a one-year guarantee goes into effect after acceptance (substantial completion) of the project.
29. Ask the General Contractor if it sees any obvious problems with the contract, which might create delays.
30. Discuss technical issues, e.g., parts of the Specifications that merit emphasis.
31. Discuss the need for a pre-construction survey and who should/will do it.
32. As-Built Drawings - The General Contractor and the subcontractors must keep As-Built Drawings updated and current. For subsurface utilities, the depth must also be shown. Monthly pay requisition will be held up until As-Builts have been completely updated.

Notes:

- The items mentioned above are not meant to be all-inclusive. They are suggestions - a starting point.
- The Consultant, in coordination with Massport's project manager, should develop a specific meeting format.
- Copies of the pre-construction agenda outline, tailored to your project and style, may be passed out to the attendees at the beginning of the pre-construction meeting.
- The importance of the Preconstruction Meeting with the General Contractor cannot be overemphasized. It sets the tone for the whole job.

MPA Contract No.: \_\_\_\_\_ Date of Meeting: \_\_\_\_\_

MPA Contract Title: \_\_\_\_\_

Contract Location: \_\_\_\_\_

[illegible]

SHOP DRAWING AND SAMPLE RECORD

Project: \_\_\_\_\_  
\_\_\_\_\_

MPA Project No.: \_\_\_\_\_  
Contractor: \_\_\_\_\_

	Date Rec'd.	Spec. Section # Shop Dwg. or Sample #	Title	Contractor Subcontractor Trade	# Received	Referred				Action				Copies To				
						To	Date Sent	# Copies	Date Ret'd	Approved	Approved as Note	Revise & Resubmt	Not Approved	Date Ret'd	Contractor	Project Mgr.	Field	File
1																		
2																		
3																		
1																		
2																		
3																		
1																		
2																		
3																		
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1																		
2																		
3																		



**SHOP DRAWING STAMP**

	<b>APPROVED</b>		<b>DISAPPROVED</b>
	<b>APPROVED AS NOTED</b> Resubmission not required.		<b>NOTED</b> – No action required.
	<b>REVISE AND RESUBMIT</b>		(Check mark indicates action taken.)

Approval is only for conformance with the design concept of the Project and compliance with the information given in the Contract Documents. Contractor is responsible for all dimensions, quantities and performance requirements to be confirmed and correlated at the job site; for all information that pertains solely to the fabrication processes or to techniques of construction; for all coordination of the work of all trades; and for assuring consistency with the Contract Documents.

Approval of drawings or items does not relieve the Contractor of the responsibility for complying with all requirements of the Contract Documents.

\_\_\_\_\_  
(Consultant Name)

Date: \_\_\_\_\_ By: \_\_\_\_\_

MPA Contract No. \_\_\_\_\_



## MEETING REPORT

Date: XXXX

MPA Project No.: \_\_\_\_\_ MPA Project Name: \_\_\_\_\_

Project Location: \_\_\_\_\_

Contractor: \_\_\_\_\_ Prepared by: \_\_\_\_\_

Meeting Location: \_\_\_\_\_ Meeting Date: \_\_\_\_\_

Meeting Title: \_\_\_\_\_

Attendees: \_\_\_\_\_

NameAffiliationTelephone

The following items were discussed:

- 1.
- 2.

THE NEXT (TYPE) MEETING IS SCHEDULED FOR DAY, DATE, 2003, TIME A.M. or P.M.

*The foregoing reflects the writer's understanding of items discussed and conclusions reached. Any discrepancies or misunderstandings should be brought to the attention of the writer immediately.*

CC: Attendees  
List others

WHEN REPORT IS COMPLETE, UPDATE FILE AND PATH.

List Others

**EXHIBIT 25**

Percent Work Completed:

Distribution: Project Manager, Accounting (2), Consultant, Project File

**EXHIBIT 26**

Percent Work Completed:

Distribution: Project Manager, Accounting (2), Consultant, Project File

**MASSACHUSETTS PORT AUTHORITY  
FORCE ACCOUNT TIME SHEET  
HOURS WORKED ON AIRPORT IMPROVEMENT PROGRAM PROJECTS WITH FAA GRANTS**

\_\_\_\_\_ Department                      \_\_\_\_\_ Unit No.                      Week Ending - Sunday: \_\_\_\_\_

Employee Name: \_\_\_\_\_

MPA No.	Hours Worked on AIP Projects with Grants							Total	Employee Signature
Grant No.	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday		

\_\_\_\_\_ (Reviewing Manager)                      \_\_\_\_\_ (Date)

**NOTE:** This time sheet is to be used to record only those hours worked during the week on Airfield Improvement Projects (AIP), i.e., projects that may be eligible for FAA grant money.

Please note: This document has been formulated to automatically calculate all items in Excel. To use, double click in area and form will convert to Excel.

## MASSACHUSETTS PORT AUTHORITY

### Construction Contractor's Partial Requisition and Certification

MPA Contract No.: \_\_\_\_\_  
Contract Title: \_\_\_\_\_  
Date of Notice to Proceed: \_\_\_\_\_  
Original Contract Completion Date: \_\_\_\_\_  
Current Contract Completion Date: \_\_\_\_\_  
Contract Award Amount: \_\_\_\_\_  
Current Adjusted Contract Amount: \_\_\_\_\_

Finance Code: \_\_\_\_\_  
Contractor: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Telephone No.: \_\_\_\_\_  
Fax No.: \_\_\_\_\_

Partial Requisition No.: \_\_\_\_\_  
Period Beginning: \_\_\_\_\_  
Period Ending: \_\_\_\_\_  
Original Days Allowed: \_\_\_\_\_  
Days Extended: \_\_\_\_\_  
Total Days Allowed: \_\_\_\_\_  
Percent Work Completed: \_\_\_\_\_

#### **Summary Totals - Value of Work Completed/Earned**

<u>Previous Periods</u>	<u>This Period</u>	<u>Total to Date</u>
\$0.00	\$0.00	\$0.00
Total Amount Earned: .....		\$0.00
Less Amount Retained at: .....		\$0.00
Total Amount Due: .....		\$0.00
Less Total Previously Paid: .....		\$0.00
Amount Due This Requisition: .....		\$0.00

CONTRACTOR'S CERTIFICATE: I hereby certify under the penalties of perjury that payments have been made to all subcontractors in compliance with the provisions of Section 39F of Chapter 30 of the General Laws of the Commonwealth of Massachusetts and the applicable provisions of the Davis-Bacon Act, that this requisition is correct for work done and materials furnished for the period shown and that payment has not been received.

Contractor: \_\_\_\_\_ Date: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

ENGINEER'S CERTIFICATE: I hereby certify the validity of this requisition in the amount shown for work completed, that the Contractor's As-Built Drawings are up-to-date and that the Contractor's payroll is in compliance with Federal and State Wage Requir

RESIDENT ENGINEER:

Company Name: \_\_\_\_\_ By: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

CONSULTING ENGINEER:

Company Name: \_\_\_\_\_ By: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

Recommended for Payment:

TRUST ENGINEER \_\_\_\_\_ By: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

Recommended for Payment:

MASSACHUSETTS PORT AUTHORITY \_\_\_\_\_ By: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

Recommended for Payment:

MASSACHUSETTS PORT AUTHORITY \_\_\_\_\_ By: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

Distribution: Project File, Project Manager, Accounting (2), M. Snyder, Contractor, Consultant

**MASSACHUSETTS PORT AUTHORITY**  
***Construction Contractor's Partial Requisition and Certification***

MPA Contract No. \_\_\_\_\_ Finance Code \_\_\_\_\_ Partial Req. No. \_\_\_\_\_ Sheet No. \_\_\_\_\_ of \_\_\_\_\_

**Contract Title:** \_\_\_\_\_ **Contractor:** \_\_\_\_\_

Item No.	Description	% of Total	Contract Amount	Amount of Previous Requisition	Amount of this Requisition	% Complete	Amount Earned to Date
			\$0.00	\$0.00	\$0.00	#DIV/0!	\$0.00
			\$0.00	\$0.00	\$0.00	#DIV/0!	\$0.00
						#DIV/0!	\$0.00
						#DIV/0!	\$0.00
						#DIV/0!	\$0.00
						#DIV/0!	\$0.00
						#DIV/0!	\$0.00
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						#DIV/0!	\$0.00
						#DIV/0!	\$0.00
						#DIV/0!	\$0.00
						#DIV/0!	\$0.00
				\$0.00	\$0.00	#DIV/0!	\$0.00
TOTAL		0.00%	\$0.00	\$0.00	\$0.00	#DIV/0!	\$0.00



**MASSACHUSETTS PORT AUTHORITY**  
**Construction Contractor's Partial Requisition and Certification**

MPA Contract No.: \_\_\_\_\_ Finance Code: \_\_\_\_\_ Partial Req. No. \_\_\_\_\_ Sheet No. \_\_\_\_\_ of \_\_\_\_\_

Contract Title: \_\_\_\_\_ Contractor: \_\_\_\_\_

Work Items		Bid Amount				Quantity Complete		Value Work Complete		Total Complete to Date	
A	B	C	D	E	F	G	H	I	J	K	L
Item No.	Description	Unit	Unit Price	Prop. Qty.	Scheduled Value	Previous Period	This Period	Previous Period	This Period	Qty. to Date	Amount Earned to Date
					(D x E)			(D x G)	D x H	(G + H)	(Dx K)
			\$0.00	0	\$0.00	0.00%	0.00%	\$0.00	\$0.00	0	\$0.00
					\$0.00			\$0.00	\$0.00	0	\$0.00
					\$0.00			\$0.00	\$0.00	0	\$0.00
					\$0.00			\$0.00	\$0.00	0	\$0.00
					\$0.00			\$0.00	\$0.00	0	\$0.00
					\$0.00			\$0.00	\$0.00	0	\$0.00
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					\$0.00			\$0.00	\$0.00	0	\$0.00
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			\$0.00			\$0.00	\$0.00	\$0.00	\$0.00	0	\$0.00

Please note: This document has been formulated to automatically calculate all items in Excel. To use, double click in area and form will convert to Excel.

## MASSACHUSETTS PORT AUTHORITY

### Construction Contractor's Final Requisition and Certification

MPA Contract No.: \_\_\_\_\_  
Contract Title: \_\_\_\_\_  
Date of Notice to Proceed: \_\_\_\_\_  
Original Contract Completion Date: \_\_\_\_\_  
Current Contract Completion Date: \_\_\_\_\_  
Contract Award Amount: \_\_\_\_\_  
Current Adjusted Contract Amount: \_\_\_\_\_

Finance Code: \_\_\_\_\_  
Contractor: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Telephone No.: \_\_\_\_\_  
Fax No.: \_\_\_\_\_

Period Beginning: \_\_\_\_\_  
Period Ending: \_\_\_\_\_  
Original Days Allowed: \_\_\_\_\_  
Days Extended: \_\_\_\_\_  
Total Days Allowed: \_\_\_\_\_  
Percent Work Completed: \_\_\_\_\_

#### **Summary Totals - Value of Work Completed/Earned**

<u>Previous Periods</u>	<u>This Period</u>	<u>Total to Date</u>
\$0.00	\$0.00	\$0.00
Total Amount Earned: .....		\$0.00
Less Amount Retained at: .....		\$0.00
Total Amount Due: .....		\$0.00
Less Total Previously Paid: .....		\$0.00
Amount Due This Requisition: .....		\$0.00

CONTRACTOR'S CERTIFICATE: I hereby certify that the quantity of work in this Final Requisition is correct, that all work has been performed in full accordance with the terms of the contract and that we have no claims for damages, losses, or expenses against the MPA, in addition to that provided herein. I hereby certify under the penalty of perjury that payments have been made to all subcontractors in compliance with the provisions of Section 39F of Chapter 30 of the General Laws of MA and the applicable provisions of the Davis-Bacon Act, that this requisition is correct for work done and materials furnished for the period shown and that payment has not been received.

Contractor: \_\_\_\_\_ Date: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

ENGINEER'S CERTIFICATE: I hereby certify the validity of this requisition in the amount shown for work completed, that the Contractor's As-Built Drawings are up-to-date and that the Contractor's payroll is in compliance with Federal and State Wage Requir

RESIDENT ENGINEER:

Company Name: \_\_\_\_\_ By: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

CONSULTING ENGINEER:

Company Name: \_\_\_\_\_ By: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

Recommended for Payment:

TRUST ENGINEER By: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

Recommended for Payment:

MASSACHUSETTS PORT AUTHORITY By: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

Recommended for Payment:

MASSACHUSETTS PORT AUTHORITY By: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

Distribution: Project File, Project Manager, Accounting (2), M. Snyder, Contractor, Consultant

### ***Construction Contractor's Final Requisition and Certification***

MPA Contract No. \_\_\_\_\_ Finance Code \_\_\_\_\_ Sheet No. \_\_\_\_\_ of \_\_\_\_\_

**Contract Title:** \_\_\_\_\_ **Contractor:** \_\_\_\_\_

[illegible]

**MASSACHUSETTS PORT AUTHORITY**  
***Construction Contractor's Final Requisition and Certification***

MPA Contract No.: \_\_\_\_\_ Fiannce Code: \_\_\_\_\_

Sheet No. \_\_\_\_\_ of \_\_\_\_\_

**Contract Title:** \_\_\_\_\_ **Contractor:** \_\_\_\_\_

Work Items		Bid Amount				Quantity Complete		Value Work Complete		Total Complete to Date	
A	B	C	D	E	F	G	H	I	J	K	L
Item No.	Description	Unit	Unit Price	Prop. Qty.	Scheduled Value	Previous Period	This Period	Previous Period	This Period	Qty. to Date	Amount Earned to Date
					(D x E)			(D x G)	D x H)	(G + H)	(Dx K)
			\$0.00	0	\$0.00	0.00%	0.00%	\$0.00	\$0.00	0	\$0.00
					\$0.00			\$0.00	\$0.00	0	\$0.00
					\$0.00			\$0.00	\$0.00	0	\$0.00
					\$0.00			\$0.00	\$0.00	0	\$0.00
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					\$0.00			\$0.00	\$0.00	0	\$0.00
			\$0.00		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0	\$0.00

**CHANGE ORDER PROPOSAL SUMMARY REPORT**

MPA Contract No. \_\_\_\_\_ MPA Contract Name \_\_\_\_\_  
Project Location: \_\_\_\_\_ Date of Meeting: \_\_\_\_\_

COP No.	Description	Date Issued	Included in CO No.	Charge Amount	Adjusted Contract Amount	Time Change	New Completion Date

## AGREEMENT FOR CHANGE ORDER

<b>MPA Project No.:</b>	<b>Project Name:</b>	<b>Location Code:</b>
<b>Change Order No.:</b>	<b>Contractor Name and Address:</b>	

1. The Massachusetts Port Authority and the undersigned Contractor agree to the following:

a. This agreement includes the following changes to the contract work:

See the attached Engineer's letter dated \_\_\_\_\_, which describes in more detail the changed work the Contractor will do in accordance with the terms and conditions as are herewith contained or attached and made a part hereof.

b. There shall be (added to) (deducted from) the contract price, (the lump sum of) (a sum not to exceed) \$\_\_\_\_\_. See the attached cost breakdown.

c. The original length of the contract was \_\_\_\_\_ days. Previous time changes were (+)(-) \_\_\_\_\_ days. This change (adds) (deducts) \_\_\_\_\_ days (to) (from) the contract time. The new contract length, including all change orders, is \_\_\_\_\_ days. The new completion date is \_\_\_\_\_.

d. This agreement shall not become effective until it is accepted, signed and approved by the Massachusetts Port Authority.

2. Reasons for the Change Order and respective cost(s):

	Reason for Change	Cost of Change
	a. New Scope	-
	b. Revision to Scope	-
	c. Differing/Latent Site Conditions	-
	d. Design Discrepancy	-
	e. Value Engineering	-
	f. Liquidated Damages	-
	g. Safety/Code Requirements	-
	h. Regulatory Mandate	-
	i. Project Acceleration	-
	j. Stop Work	-
	k. Quantity Adjustment (Unit Price Contract)	-
	l. Other	-
		-
	<b>TOTAL</b>	-

3. Cost Summary of Changes to Date:

Contract Award Amount	-
Previous Additions	-
Previous Deletions	-
Previous Net Total	-
This Change	-
New Total Contract Amount	\$ -

4. The amount of this change eligible for FAA reimbursement is:

5. Execution of the above agreement by Massport is recommended by:

Architect-Engineer: By: \_\_\_\_\_ Date: \_\_\_\_\_

Firm Name: \_\_\_\_\_

Contractor: By: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

Massport: By: \_\_\_\_\_ Capital Programs Proj. Mgr. Date: \_\_\_\_\_

6. Approved: By: \_\_\_\_\_ Date: \_\_\_\_\_  
Deputy Director for Construction and Engineering Services

Distribution: Capital Programs File, Contractor, Accounting-W. Vitale, Capital Programs Project Manager, Consultant, S. Coppenrath, G. Younger

*Please Note: This document has been formulated to automatically calculate all items in Excel. To use, double click in area and form will convert to Excel.*

**MASSACHUSETTS PORT AUTHORITY  
PAYMENT FOR EXTRA WORK/CREDIT FOR WORK DELETED  
REFERENCE: DIV. 1, ARTICLE 80B**

Contract No.: \_\_\_\_\_ Project Name and Location: \_\_\_\_\_

Description of Extra/Deleted Work: \_\_\_\_\_

**I. SUBCONTRACTOR COST BREAKDOWN**

Supply adequate backup for A, B, C and D)

<b>A. MATERIAL COST</b>		
1. Actual Cost	\$	-
2. 12.5% of Line A.1	\$	-
3. Subtotal of Material Cost (A.1 + A.2)		\$ -
<b>B. LABOR COST</b>		
1. Direct Labor Cost of Foreman and Laborers	\$	-
2. Benefits/Allowances:		
a. Health, Welfare and Pension (Total)	\$	-
3. Subtotal of B.1 and B.2.a.	\$	-
4. 15% of Line B.3	\$	-
5. Other Costs		
a. Insurance and Taxes (___% of Line B.1)	\$	-
6. Subtotal of Labor Cost (B.3 +B.4 +B.5.a)		\$ -
<b>C. EQUIPMENT COST</b>		
Rental Allowances		\$ -
<b>D. ALLOWANCE FOR BOND %</b>		
		\$ -
<b>E. TOTAL SUBCONTRACTOR COST (A+B+C+D)</b>		
		\$ -

**II. GENERAL CONTRACTOR COST BREAKDOWN**

Supply adequate backup for A, B, C and D)

<b>A. MATERIAL COST</b>		
1. Actual Cost	\$	-
2. 12.5% of Line A.1	\$	-
3. Subtotal of Material Cost (A.1 + A.2)		\$ -
<b>B. LABOR COST</b>		
1. Direct Labor Cost of Foreman and Laborers	\$	-
2. Benefits/Allowances:		
a. Health, Welfare and Pension (Total)	\$	-
3. Subtotal of B.1 and B.2.a.	\$	-
4. 15% of Line B.3	\$	-
5. Other Costs		
a. Insurance and Taxes (___% of Line B.1)	\$	-
6. Subtotal of Labor Cost (B.3 +B.4 +B.5.)		\$ -
<b>C. EQUIPMENT COST</b>		
Rental Allowance		\$ -
<b>D. ADDITIONAL ALLOWANCE</b>		
7.5% of Total Subcontractor Cost (Line I.E.)		\$ -
<b>E. ALLOWANCE FOR BOND %</b>		
		\$ -
<b>F. TOTAL GENERAL CONTRACTOR COST (IIA through IIE)</b>		
		\$ -

**MASSACHUSETTS PORT AUTHORITY  
PAYMENT FOR EXTRA WORK/CREDIT FOR WORK DELETED  
REFERENCE: DIV. 1, ARTICLE 80B**

**Contract No.:** \_\_\_\_\_ **Project Name and Location:** \_\_\_\_\_

**Description of Extra/Deleted Work:** \_\_\_\_\_

**I. SUBCONTRACTOR COST BREAKDOWN**

(Supply adequate backup for A, B, C and D – Repeat for additional subcontractors)

A. MATERIAL COST		
1. Actual cost	_____	
2. 12.5% of line A.1	_____	
3. Subtotal of Material Cost (A.1 + A.2)	_____	_____
B. LABOR COST		
1. Direct Labor Cost of Foreman and Laborers	_____	
2. Benefits/Allowances:		
a. Health, Welfare and Pension (total)	_____	
3. Subtotal of B.1 and B.2a	_____	
4. 15% of Line B.3	_____	
5. Other cases		
a. Insurance and Taxes (____% of Line B.1)	_____	
6. Subtotal of Labor Cost (B.3 + B.4 + B.5.a)	_____	_____
C. EQUIPMENT COST		
Rental Allowance		_____
D. ALLOWANCE FOR BOND %	_____	
E. TOTAL SUBCONTRACTOR COST (A+B+C+D)		=====

**II. GENERAL CONTRACTOR COST BREAKDOWN**

(Supply adequate backup for A, B, C and D)

A. MATERIAL COST		
1. Actual cost	_____	
2. 12.5% of line A.1	_____	
3. Subtotal of Material Cost (A.1 + A.2)	_____	_____
B. LABOR COST		
1. Direct Labor Cost of Foreman and Laborers	_____	
2. Benefits/Allowances:		
a. Health, Welfare and Pension (total)	_____	
3. Subtotal of B.1 and B.2a	_____	
4. 15% of Line B.3	_____	
5. Other cases		
a. Insurance and Taxes (____% of Line B.1)	_____	
6. Subtotal of Labor Cost (B.3 + B.4 + B.5.a)	_____	_____
C. EQUIPMENT COST		
Rental Allowance		_____
D. ADDITIONAL ALLOWANCE		
7.5% of Total Subcontractor Cost (Line I.E)		_____
E. ALLOWANCE FOR BOND		_____
F. TOTAL GENERAL CONTRACTOR COST (IIA through IIE)		=====

**Please Note:** This document has been formulated to automatically calculate all items in Excel. To use, double click in area and form will convert to Excel.



**MASSACHUSETTS PORT AUTHORITY**

**Daily Progress Report**

Contractor: \_\_\_\_\_

Project: \_\_\_\_\_

Report No. \_\_\_\_\_

Contract No. \_\_\_\_\_

Project No. \_\_\_\_\_

Date \_\_\_\_\_ Day of Week: \_\_\_\_\_

Weather: \_\_\_\_\_

Temp: 8 a.m. \_\_\_\_\_ 12 \_\_\_\_\_ 4 p.m.  
p.m. \_\_\_\_\_

**Time Used To Date**

Working Days Through Previous Report \_\_\_\_\_

Working Days This Report \_\_\_\_\_

Total Working Days to Date \_\_\_\_\_

Percent of Contract Time \_\_\_\_\_

Calendar Days \_\_\_\_\_

Percent of Contract Time \_\_\_\_\_

1. Description of General Contractor's Work today.\*
2. Description of Subcontractor's Work today.\*
3. Equipment in use, arrived, departed. Note idle equipment and reason therefore.
4. Number of men working, by trades for both General Contractor and Subcontractor.
5. Tests made or samples sent.
6. Materials arrived, accepted, rejected, stored.
7. Occurrences, decisions, visitors and purpose of visit, accident, remarks, etc.

\* Give work started, in progress, completed, location, approximate quantities, delays affecting progress, etc.

**USE PARAGRAPHS AS NUMBERED ABOVE IN REPORT.**

Copies to:

By: \_\_\_\_\_

Title: \_\_\_\_\_

**MONTHLY CONSTRUCTION PROGRESS REPORT**

Month Ending: \_\_\_\_\_ Date: \_\_\_\_\_

MPA Contract No.: \_\_\_\_\_ Contract Name: \_\_\_\_\_

Location: \_\_\_\_\_

Contractor: \_\_\_\_\_ Consultant: \_\_\_\_\_

Completion Date: \_\_\_\_\_ Duration: \_\_\_\_\_

Activities for current month: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Anticipated work for next month: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Anticipated Problems: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Financial Summary:**

Consultant Fee: \_\_\_\_\_

Construction Contract Award: \_\_\_\_\_

Approved Change Orders: \_\_\_\_\_

Anticipated Change Orders: \_\_\_\_\_

Projected Cost: \_\_\_\_\_

Anticipated Completion Date: \_\_\_\_\_

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.

# Compliance Reporting

Attached are four Disadvantaged Business Employer (DBE) Reports, required from construction contractors, as follows:

- A. The DBE Quarterly Expenditure Report
- B. The Weekly Payroll Report Form (2 pages)
- C. The Contractor's Weekly Workforce Utilization Report
- D. The Quarterly Projected Work Force Table

**MASSACHUSETTS PORT AUTHORITY  
DISADVANTAGED BUSINESS ENTERPRISE (DBE)  
QUARTERLY EXPENDITURE REPORT**

MPA Contract No. and Name \_\_\_\_\_  
 Name of General Contractor: \_\_\_\_\_  
 Contract Amount: \$ \_\_\_\_\_  
 Name of DBE: \_\_\_\_\_  
 Date Work Began: \_\_\_\_\_ Estimated Date of Completion: \_\_\_\_\_

NOTE: A separate report must be submitted for each Disadvantaged Business Enterprise. Reports are to be submitted *no later than the corresponding dates listed below*, to the Compliance Department each calendar quarter for the duration of the project, regardless of whether payment has been made during the quarter. Reports can be faxed (copies received must be clear and legible) to John Pires, Construction Compliance Manager at 617-568-3199. Mr. Pires can be reached at 617-568-3196 or e-mail: jpires@massport.com.

**DUE DATES FOR REPORT SUBMITTAL TO MASSPORT ARE AS FOLLOWS:**

<b>1<sup>st</sup> Quarter</b>	<b>(July 1 – September 30)</b>	<b>Report is due no later than October 15</b>
<b>2<sup>nd</sup> Quarter</b>	<b>(October 1 – December 31)</b>	<b>Report is due no later than January 15</b>
<b>3<sup>rd</sup> Quarter</b>	<b>(January 1 – March 31)</b>	<b>Report is due no later than April 15</b>
<b>4th Quarter</b>	<b>(April 1 – June 30)</b>	<b>Report is due no later than July 15</b>

Quarter Reporting: Begin \_\_\_\_\_ End: \_\_\_\_\_ Final Report? Yes: ☐ No: ☐  
 1. DBE Contract Amount: \$ \_\_\_\_\_  
 2. Amount paid to DBE this quarter: \$ \_\_\_\_\_  
 3. Total amount paid to DBE to date: \$ \_\_\_\_\_  
 4. Balance due DBE: \$ \_\_\_\_\_  
 5. Comments (including justifiable explanation for any shortfall, if "Final Report"): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Under the pains and penalties of perjury we hereby certify that the information supplied herein is correct and complete.

**Prime Contractor:**

Signed: \_\_\_\_\_  
 Print Name: \_\_\_\_\_  
 Title: \_\_\_\_\_  
 Telephone No.: \_\_\_\_\_  
 E-Mail: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Fax: \_\_\_\_\_

**Disadvantaged Business Enterprise:**

Signed: \_\_\_\_\_  
 Print Name: \_\_\_\_\_  
 Title: \_\_\_\_\_  
 Telephone No.: \_\_\_\_\_  
 E-Mail: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Fax: \_\_\_\_\_

## WEEKLY PAYROLL RECORDS REPORT & STATEMENT OF COMPLIANCE

In accordance with Massachusetts General Law c149, §27B, a true and accurate record must be kept of all persons employed on the public works project for which the enclosed rates have been provided. A Payroll Form has been printed on the reverse of this page and includes all the information required to be kept by law. Every contractor or subcontractor is required to keep these records and preserve them for a period of three years from the date of completion of the contract.

In addition, every contractor and subcontractor is required to submit a copy of their weekly payroll records to the awarding authority. This is required to be done on a weekly basis. Once collected, the awarding authority is also required to preserve those records for three years.

In addition each such contractor, subcontractor or public body shall furnish to the Department of Labor and Workforce Development/Division of Occupational Safety within fifteen days after completion of its portion of the work a statement, executed by the contractor, subcontractor or public body who supervises the payment of wages, in the following form:

STATEMENT OF COMPLIANCE	
_____, 20 _____	
I, _____,	_____
(Name of signatory party)	(Title)
do hereby state:	
That I pay or supervise the payment of the persons employed by	
_____	on the _____
(Contractor, subcontractor or public body)	(Building or project)
and that all mechanics and apprentices, teamsters, chauffeurs and laborers employed on said project have been paid in accordance with wages determined under the provisions of sections twenty-six and twenty-seven of chapter one hundred and forty-nine of the General Laws.	
Signature _____	
Title _____	

## WEEKLY PAYROLL REPORT FORM

Company Name: \_\_\_\_\_

Prime Contractor

Subcontractor

Ethnic Codes

Project Name: \_\_\_\_\_

\_\_\_\_\_  
(If subcontractor, list Prime Contractor Name here)

1) Caucasian

2) Black

3) Hispanic

4) Asian

5) Other

MPA Contract No.: \_\_\_\_\_

Employer Signature: \_\_\_\_\_

Work Week Ending: \_\_\_\_\_

Print Name and Title: \_\_\_\_\_

Final Report

Employee Name and Address	Work Classification	Hours Worked								(A) Tot. Hrs.	(B) Hourly Base Wage	Employer Contributions			(F) [B+C+D+E] Hourly Total Wage (prev. wage)	(G) (A*F) Weekly Total Amount
			S	M	T	W	T	F	S			(C) Health & Welfare	(D) Pension	(E) Supp. Unemp.		
		S														
		O T														
		S														
		O T														
		S														
		O T														
		S														
		O T														
		S														
		O T														
		S														
		O T														

NOTE: Every contractor and subcontractor is required to submit a copy of their weekly payroll records to the awarding authority.

# MASSACHUSETTS PORT AUTHORITY CONTRACTOR'S WEEKLY WORKFORCE UTILIZATION REPORT

Project Name: \_\_\_\_\_ Contract No.: \_\_\_\_\_ Contract Value: \_\_\_\_\_ Minority Hiring Goal: \_\_\_\_\_ Women Hiring Goal: \_\_\_\_\_  
 Name of General Contractor: \_\_\_\_\_ Address: \_\_\_\_\_ Telephone No.: \_\_\_\_\_  
 Name of Contractor Filing Report: \_\_\_\_\_ Address: \_\_\_\_\_ Telephone No.: \_\_\_\_\_  
 Week Ending: \_\_\_\_\_ Report No.: \_\_\_\_\_ Date Work Began: \_\_\_\_\_ ☐ Check here if this is a final report \_\_\_\_\_ Date Work Completed: \_\_\_\_\_

Job Category	# Emp.	Weekly Total Work Hours	# Minority	Weekly Total Minority Hours	Minority %	# Women	Weekly Total Woman Hours	Woman %	Total Workforce Utilization Since Contract Began					Remarks
									Work Hrs. to Date	Minority Hrs. to Date	Minority % to Date	Woman Hs. To Date	Woman % to Date	
<b>TOTAL</b>														

Return to: Massachusetts Port Authority  
Compliance Department  
One Harborside Drive, Suite 200S  
East Boston, MA 02128-2909

Copy to: Resident Engineer  
Or Project Manager

Prepared by: \_\_\_\_\_

Title: \_\_\_\_\_

Phone: \_\_\_\_\_

Date: \_\_\_\_\_

Name of Job Superintendent/Foreman: \_\_\_\_\_

Phone: \_\_\_\_\_



**MASSACHUSETTS PORT AUTHORITY  
QUARTERLY PROJECTED WORK FORCE TABLE**

Name of Contractor: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

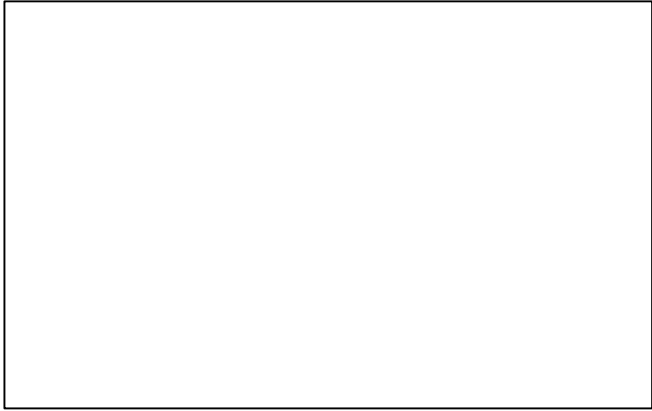
Trades Utilized: \_\_\_\_\_

WEEK ENDING	PROJECTED TOTAL HOURS BY ALL PERSONNEL	PROJECTED TOTAL OF ALL WOMEN AND MINORITY HOURS		TRADES USED THIS WEEK
		MINORITY HRS.	WOMEN HRS.	

**NOTE: A REVISED TABLE MUST BE SUBMITTED  
IF ANY CHANGES ON PROJECTIONS OCCUR.**

PREPARED BY: \_\_\_\_\_

**PROJECT PHOTOGRAPHS****SLIDE**

Date	Description	MPA Contract No.
		

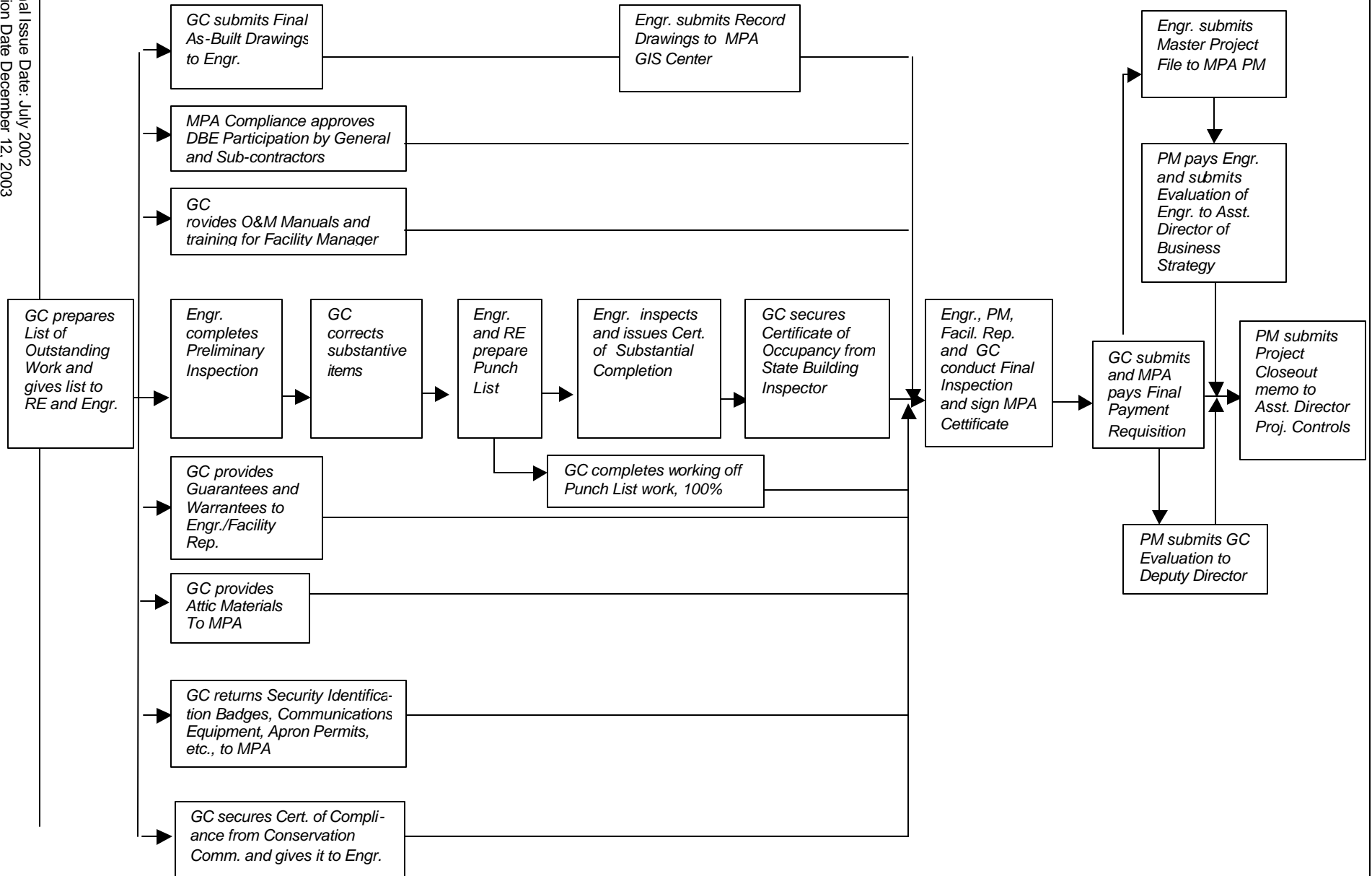
**PRINT**

MPA Contract Name:	_____
Contract Locations:	_____
Contractor:	_____
Photo No.:	_____ Date Taken _____
Name of Photographer:	_____
Description of View:	_____
	_____
	_____
	_____
	_____
	_____
	_____

**BACK OF PHOTO**

## CONSTRUCTION CLOSEOUT FLOWCHART

Original Issue Date: July 2002  
Revision Date December 12, 2003



# MASSACHUSETTS PORT AUTHORITY

## Construction Closeout Checklist

Project No.: \_\_\_\_\_ Project Name: \_\_\_\_\_

General Contractor: \_\_\_\_\_ Architect/Engineer: \_\_\_\_\_

PM's Initials	Event	Date
_____	GC submits a List of Outstanding Work to RE and Engineer .....	_____
_____	GC submits signed As-Built Drawings to the Engineer .....	_____
_____	Engineer submits properly formatted Record Drawings to MPA GIS Center .....	_____
_____	MPA Compliance Dept. approves DBE participation by GC and verification that all required Compliance reports, including those of all subcontractors, have been submitted. ....	_____
_____	GC submits Operation and Maintenance Manuals to the Engineer and Facility Managers.....	_____
_____	GC conducts training for Facility Manager and Operators.....	_____
_____	GC submits Guarantees/Warranties to Engineer/Facility Representative.....	_____
_____	GC turns over Attic Materials to the MPA Facility Manager .....	_____
_____	GC returns Security Identification Badges and Apron Permits to Aerodrome Office.....	_____
_____	GC returns loaned Communication Equipment to Massport (Aviation Operations).....	_____
_____	GC gets Certificate of Compliance from the Conservation Commission and submits to Engineer	_____
_____	Engineer completes Preliminary Inspection (before acceptance for occupancy).....	_____
_____	GC corrects substantive items .....	_____
_____	RE and Engineer prepare Punch List.....	_____
_____	Engineer inspects and issues Certificate of Substantial Completion.....	_____
_____	State Building Inspector issues Certificate of Occupancy .....	_____
_____	GC completes working off Punch List.....	_____
_____	PM, Engineer and GC complete Final Inspection of Project with Client.....	_____
_____	MPA, GC and Engineer sign Massport Certificate of Final Inspection, Release and Acceptance	_____
_____	Final Pay Requisition submitted by GC and paid by Massport.....	_____
_____	Ribbon Cutting Ceremony .....	_____
_____	Submit General Contractor Evaluation .....	_____
_____	Engineer submits Master Project File, including Record Drawings, to the MPA Project Manager	_____
_____	PM pays Consultant and submits (Engineer) Evaluation to Assistant Director, Business Strategy	_____
_____	MPA submits Consultant (Engineer) Evaluation .....	_____
_____	PM submits Project Closeout Memo to Assistant Director, Project Controls, stating all work completed, all payments made .....	_____
_____	Mail Project Evaluation form to customer for comments .....	_____

**SECTION 01050****RECORD DOCUMENTS and FIELD ENGINEERING****PART 1-- PART 1 - GENERAL****1.01 RELATED DOCUMENTS**

- A. THE GENERAL CONDITIONS DIVISION I, and SPECIAL PROVISIONS DIVISION II and SAMPLE CONTRACT FORMS DIVISION IV are hereby made part of this Section.
- B. Examine all Drawings and all Sections of the Specifications for requirements and provisions affecting the work of this Section.

**1.02 SCOPE OF WORK**

- A. Work under this Section, without limiting the generality thereof, consists of the furnishing and installation of all materials, equipment, labor, testing, transportation facilities, and all operations and adjustments required for the complete and operating installation as indicated on the drawings, stipulated in the specifications and as reasonably implied by either or both. This includes, but is not limited to the following:
  - 1. ....
  - 2. ....
- B. Incidental materials necessary for the completion of this installation, and usually furnished in connection therewith, shall be furnished and installed whether or not specifically mentioned.
- C. Should drawings not agree within themselves or not agree with the specifications, the greater quantity or superior quality of work or materials shall be included.
- D. Work to be performed under this Section is primarily shown on Drawings .....

**1.03 RELATED WORK IN OTHER SECTIONS**

- A. The following items of labor and/or materials and equipment are furnished and/or installed under other Sections of the specifications.
  - 1. Section ..... - .....
  - 2. Section ..... - .....

**1.04 QUALITY CONTROL**

- A. The Contractor shall employ a Professional Civil Engineer or Professional Land Surveyor registered in the Commonwealth of Massachusetts and acceptable to the Authority to establish the construction baseline. A minimum of three intervisible horizontal control points with locations based on the Massachusetts State Plane Coordinate System Mainland Zone (NAD 83, FEET) shall be established for all projects which include site work, utility installation or modifications, and structures with foundation systems. A minimum of three vertical control points (Benchmarks) will be established based on NGVD.29.

- B. The Contractor's Professional Civil Engineer or Professional Land Surveyor shall provide copies of all working baseline established for construction and, as a minimum, verify the accuracy of the control on a monthly basis. A copy of each monthly survey shall be submitted to the Authority.

#### 1.05 SUBMITTALS

- A. Submit the resume of the Professional Civil Engineer or Professional Land Surveyor, which includes the name, address, telephone number, professional registration number and employment history to the Authority for approval prior to starting survey work.
- B. On request by the Authority, submit documentation verifying accuracy of survey work for this project. Documentation shall include electronic files of data collection, AutoCAD drawing files, field books, sketches, drawings and layouts.
- C. Submit two copies of progress AAs-Built drawings with each partial requisition.
- D. Before the Authority endorses the work as "complete," the Contractor must submit to the Consultant all of the Contractor-prepared As-Built Prints. East As-Built Print must include a Contractor-signed certification statement that confirms the completeness and accuracy of as-built conditions. The Consultant then updates the As-Built Drawings as follows: 4-mil Mylar drawings and electronic AutoCAD files, along with scanned 200 dbi TIFF files of As-Built Mylar drawings. Each As-Built Mylar drawing must also include a Contractor-signed certification statement that confirms the completeness and accuracy of documented as-built conditions. Such statement shall read: "This Drawing reflects As-Built Conditions as certified by (insert contractor's name) ." The Consultant then delivers to the Authority the certified As-Built Drawings.

#### 1.06 PROJECT RECORD DOCUMENTS

- A. Maintain a complete and accurate log of control and survey work as it progresses.
- B. Throughout the Project Duration maintain, on site, one set of the following record documents; record actual revisions to the work:
  - 1. Contract Drawings.
  - 2. Electronic AutoCAD drawing files for Contract Drawing and Shop Drawings.
  - 3. Addenda
  - 4. Change Orders and other modifications to the Contract Drawings.
  - 5. Reviewed and approved shop drawings, product data, and samples.
  - 6. Written interpretations and clarifications.
  - 7. Field orders or directives.
  - 8. Field test reports.
  - 9. Construction photographs.
- C. Store Record Documents separate from documents used for construction.

- D. Record information concurrent with construction progress. Refer to Division II.
- E. Specifications: Legibly mark and record at each product section description of the actual products installed, including the following:
1. Manufacturer's name, address, telephone number and product model and serial number.
  2. Product substitutions or alternates utilized.
  3. Changes made by Addenda, clarifications or interpretations, field orders and directives.
- F. Record Documents and Shop Drawings: Upon commencement of work, the Authority will provide six (6) sets of Contract Drawings to the Contractor. The Contractor and Subcontractors shall legibly record actual construction on these drawings and shop drawings. The information, which is required to be recorded, includes:
1. **SITE/CIVIL**
    - a. All site and civil work shall be located by survey based on the Massachusetts State Plane Coordinate System Mainland Zone for Northings and Eastings. All site and civil work shall be located vertically with elevations based on project datum as shown on the Contract Plans
    - b. All site utilities coordinates and elevations shall be recorded at the point of origin, building penetrations, building perimeter, all changes in direction (vertically or horizontally), all changes in sizes, valve locations, Tee locations, duct bank profile changes, and minimally every 50' of all buried/concealed utility work. Notations describing the size and type of material shall be included.
    - c. Gravity systems (sewer and drain) shall show centerline invert elevations at 50' intervals, at every bend in the pipe (vertically or horizontally), and at structures (manholes, buildings, bulkheads, etc.). Include top and bottom elevations and locations of corners of rectangular structures, centerline top and bottom elevations, centerline location and diameter of circular structures (chamber, manholes, tanks, etc.). Indicate the size and type of materials.
    - d. All existing underground utilities encountered during the execution of work shall be located within the excavation horizontally and vertically with same requirements specified for new construction.
    - e. Forced systems (water, steam, high temperature hot water, chilled water, condensate, forced sanitary, forced drainage, fuel and gas) shall show centerline top of pipe at 50' intervals, at every bend or joint (vertically or horizontally), end points, valves, Tees and fittings, and at structures. Include bottom and top elevations and locations of corners for rectangular structures,

centerline bottom and top locations of circular structures (chambers, tanks, valve pits, metering pits, etc.). Indicate the size and type of materials.

- f. Electrical and Communication systems shall show centerline top of cable, conduit or duct bank at 50' intervals, at every bend or change in section of duct bank and at all end points. Include bottom and top elevations and locations of corners for rectangular structures, centerline bottom and top locations of circular structures (chambers, tanks, manholes, vaults, etc.). Include duct bank configuration and typical section at every change in shape, orientation or size.
- g. Piles, Caissons and deep foundations shall include top centerline location, elevation, orientation, pile type, depth of structure from top elevation and typical section and type of material. Indicate either battered or straight pile. If battered, the direction and slope of batter shall be indicated.
- h. Underground structural elements (bulkheads, seawalls, retaining walls, building foundation, etc.) shall include locations, sizes and elevations of anchoring slabs, pile caps, grade beams, footings and other structural elements which project beyond the exterior face of foundation wall.
- i. Underground Tanks shall show the location and elevation of anchoring slabs with corner locations, bottom and top elevations and locations of corners of rectangular structures, centerline bottom and top locations and elevations of circular structures. Indicate the size and types of materials.
- j. Earth Retention systems which are abandoned in place, by design, shall show location and elevations of all structural elements of the system, including deadman, anchors and tiebacks.

2. **ARCHITECTURAL**

- a. Field changes of dimension or detail.
- b. Details not originally included on the original Contract Drawings.

3. **STRUCTURAL**

- a. NAD 83 coordinate locations (FEET) and NGVD 29 elevations (FEET) of foundation elements at all corners.
- b. Field changes of dimension or detail.
- c. Details not originally included on original contract documents.

4. **PLUMBING**

- a. Measured horizontal and vertical locations of all under-slab drains, vents, sanitary and water lines referenced to permanent surface features. Include piping sizes and materials. Measurements are required at 50' intervals and at all bends (vertically and horizontally), joints and fittings.



- b. Measured locations of all internal drains, vents, waste, waterlines and appurtenances, referenced to visible and accessible features of the work.
- c. Provide original permits and record of inspections.

5. **FIRE PROTECTION**

At the completion of the installation of a new automatic Standpipe/ Sprinkler system or any modifications, alterations, additions or deletions to an existing automatic fire sprinkler system, the following record documents shall be provided **PRIOR TO THE REQUEST FOR WITNESSING AND ACCEPTANCE OF THE FIRE SPRINKLER SYSTEM.** Architectural reflected ceiling plans showing only the automatic standpipe/sprinkler system installation and related components with specific identification of the following:

- a. Riser diagram
- b. Name, address and Massachusetts Contractor's License Number of the installing contractor.
- c. Name, address of specifying engineer (PE responsible for design of the system)
- d. Legend
- e. Equipment and devices manufacturer name and model number.
- f. Sequence of operation: Interactive operation of sprinkler/standpipe alarm and supervisory devices interconnected with the fire alarm system and resulting effects of activation of the alarm and supervisory devices.
- g. Testing protocol
- h. Owner's maintenance manual, both printed and electronic versions. The electronic version shall be on CD in Adobe Acrobat PDF format.
- i. Complete sprinkler system piping layout indicating all sizes and components.
- j. Complete standpipe system piping layout indicating all sizes and components.
- k. Complete water supply feed main with (underground fire main) source of connection including type of valves, material type and sizes.
- l. Water supply data, hydrant want flow test results, location of test in relation to new system fire main connection.
- m. Design criteria, hazard classification, design basis.
- n. Hydraulic calculations and results
- o. Sprinkler system flow alarm device location, identification and time setting.
- p. Sprinkler flow alarm device ATest Valve≡ location and identification.
- q. Location of floor/ceiling penetrations with fire sleeves.

- r. Location of all low point (auxiliary) drains.
- s. Siamese connections location and system identification
- t. Material and Test Certificates (NFPA Forms) properly executed; sprinkler system, standpipe system, fire pump system, underground fire mains.

6. FIRE ALARM SYSTEMS

At the completion of the installation of a new fire alarm system or any modifications, alterations, additions or deletions to an existing fire alarm system, the following record documents shall be provided **PRIOR TO THE REQUEST FOR WITNESSING AND ACCEPTANCE OF THE FIRE ALARM SYSTEM**. Architectural reflected ceiling plans showing only the fire alarm system installation and related components including interconnected life safety system devices and equipment with specific identification of the following:

- a. Riser diagram
- b. Name, address and Massachusetts Contractor's License Number of the installing Contractor.
- c. Name and address of the specifying engineer (PE responsible for design of the system).
- d. Legend.
- e. Equipment and devices manufacturer name and model number.
- f. Sequence of operation: interactive operation of fire alarm system and all interconnected life safety systems and resulting effect of activation of initiating devices.
- g. Testing protocol.
- h. Record of completion certificate (NFPA - 72 Form)
- i. Hard copy input/output sequence program.
- j. Owner's maintenance manual, both printed and electronic versions. The electronic version shall be on CD in Adobe Acrobat format.
- k. Writing methods (EMT, pipe, exposed)
- l. Wire type, wire size and number of wires.
- m. Identification label.
- n. Accurate routing/location of all wiring, conduit, raceways, junction boxes referenced to column lines and finished floor elevations.
- o. Junction and terminal boxes
- p. Location of fire alarm control panels and sub-panels.
- q. Location of remote annunciators

- r. Main power supply and location
- s. Emergency communication equipment: fire phones, jacks or emergency telephones.
- t. Secondary power supply type and location.
- u. Standby batteries location, size and calculations.
- v. Location of all initiating devices: smoke detectors, heat detectors, flame detectors, duct detectors, and pull-boxes
- w. Location of all initiating remote test devices, if applicable.
- x. Location of all notification devices: bells, horns, strobes, combination horn/strobe, speakers
- y. Device wiring circuit and type.
- z. Order of devices on a wiring circuit.
- aa. Device/circuit identification.
- bb. Power wattage of device
- cc. Device setting (if applicable)
- dd. Interconnected life safety system devices and locations: damper, fan control relays, elevator recall relays, door unlocking devices, door releasing devices, temperature sensors.
- ee. Sprinkler flow alarm device location, identification and time setting.
- ff. Sprinkler flow alarm device Atest valve≡ location and identification.
- gg. Sprinkler system supervisory device location, identification: tamper switches, high/low pressure alarms and pressure settings.
- hh. Special suppression system interconnection device/relay/contact.

**7. MECHANICAL / HVAC**

- a. Indicate the names, addresses, telephone numbers and contact persons for all manufacturers. Include model number, motor H.P., CFM rating, and other pertinent data for all equipment.
- b. Provide air balancing reports.
- c. Record the filter type, category and quantity on the drawings adjacent to each Air Handling Unit.
- d. Provide valve tag identification numbers on drawings. Provide a valve tag chart which identifies the tag number, system, column line referenced location and elevation, valve type and size.

- e. Provide color coded AutoCAD plot of piped systems in accordance with the Massport's standard color coding. The plot shall identify the system and flow directions.
- f. Provide bound original permits and inspection certificates for Backflow Preventers, Elevators/Escalators, Pressure Vessels and Boilers.

**8. ELECTRICAL**

- a. Provide AutoCAD color plots of one line diagrams for Power, Emergency Power, Energy Management System, Security Card Access System, Mechanical systems, Fire Alarm, Electronic Switch Gear Control, Sound, Telephone and Security. Each system shall be submitted separately and color coded consistent with Massport's Standard Color Coding. Locate major system components to column lines, elevation or floor designation.
- b. Provide a site block diagram for Medium Voltage, Low Voltage, Site Lighting and Fiber Optic cabling.
- c. Provide locations, elevations or floor designations for lighting panels and distribution panels.
- d. Provide conduit layout drawings for all conduit 2" and larger. Indicate the point of origin, termination, junction boxes, fittings, contents of pipe and materials.
- e. Provide a replacement lamp chart, which shall include: location manufacturer, model, lamp type, wattage.

**PART 2 - PRODUCTS**

Not Used

**PART 3 - EXECUTION**

**3.01 EXAMINATION**

- A. Verify locations of survey control points prior to starting work.
- B. Verify horizontal and vertical position of temporary benchmarks by field traverse to at least two known reference monuments.

**3.02 SURVEY REQUIREMENTS**

- A. Utilize procedures and practices defined in 250 CMR to establish horizontal and vertical control of the work.
- B. Establish coordinates based on the Massachusetts State Plane Coordinate System Mainland Zone (FEET), and elevations based on NGVD 29 (FEET). Locate and layout by instrumentation:
  - 1. Site improvements including pavements; stakes for grading, fill and topsoil

- replacement.
  - 2. Utility installation slopes and invert elevations.
  - 3. Grid or axis for structures.
  - 4. Building foundation, column locations, floor elevations, and equipment location and elevations.
  - 5. Verify layout control periodically, in accordance with accepted survey practices.
- C. Where the dimensions and locations of existing structures are of critical importance in the installation or connection of any part of the work, verify such dimensions and locations in the field before the fabrication and installation of any material or equipment, which is dependent on the correctness of such information.

**END OF SECTION 01050**

(Insert document electronic file location id here)

# MASSACHUSETTS PORT AUTHORITY

## CERTIFICATE OF SUBSTANTIAL COMPLETION

OWNER  
ARCHITECT  
CONTRACTOR  
FIELD

PROJECT:  
(Name and Address)

PROJECT NO.:

CONTRACT FOR:  
CONTRACT DATE:

TO OWNER:  
(Name and Address)

TO CONTRACTOR:  
(Name and address)

DATE OF ISSUANCE:  
PROJECT OR DESIGNATED PORTION SHALL INCLUDE:

The Work performed under this Contract has been reviewed and found, to the Architect's best knowledge, information and belief, to be substantially complete. Substantial Completion is the state in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents, so the Owner can occupy or utilize the Work for its intended use. The date of Substantial Completion of the Project or portion thereof designated above is hereby established as which is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below:

A list of items to be completed or corrected is attached hereto. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

\_\_\_\_\_  
ARCHITECT BY \_\_\_\_\_ DATE \_\_\_\_\_

The Contractor will complete or correct the Work on the list of items attached hereto within \_\_\_\_\_ days from the above date of Substantial Completion.

\_\_\_\_\_  
CONTRACTOR BY \_\_\_\_\_ DATE \_\_\_\_\_

The Owner accepts the Work or designated portion thereof as substantially complete and will assume full possession thereof at \_\_\_\_\_ on \_\_\_\_\_.  
(time) (date)

\_\_\_\_\_  
OWNER BY \_\_\_\_\_ DATE \_\_\_\_\_

The responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance shall be as follows:

(Note - Owner's and Contractor's legal and insurance counsel should determine and review insurance requirements and coverage.)

## GUARANTY/WARRANTY REPORT FORM

Sheet No. \_\_\_\_\_

Contract Title: \_\_\_\_\_ Project No. \_\_\_\_\_

Location:

Specification Section No.: \_\_\_\_\_ Copies to: \_\_\_\_\_

Date: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_

Subcontractor Authorized Signature: \_\_\_\_\_

**GUARANTY/WARRANTY DATA**

[illegible]

# MASSACHUSETTS PORT AUTHORITY

## CERTIFICATE OF FINAL INSPECTION, RELEASE AND ACCEPTANCE

Contract No. \_\_\_\_\_ Title: \_\_\_\_\_ Finance Code: \_\_\_\_\_  
 Contractor: \_\_\_\_\_ Address: \_\_\_\_\_  
 Designer: \_\_\_\_\_ Address: \_\_\_\_\_

### CERTIFICATE OF FINAL INSPECTION

Substantial Completion was achieved on \_\_\_\_\_. This is to certify that a complete final inspection of the above-entitled contract was made on \_\_\_\_\_ by the undersigned and the entire work was completed in accordance with the plans and specifications. The undersigned recommend acceptance of the subject contract.

_____	_____	_____	_____
Designer	Authorized Signature	Title	Date
_____	_____	_____	_____
Resident Engineer	Authorized Signature	Title	Date

### CERTIFICATE OF RELEASE

1. The undersigned hereby certifies all work has been completed in accordance with plans, specifications and contract requirements, and that all Change Orders have been supported pursuant to the contract specifications.

2.	Contract Award Price: \$ _____	Adjusted Contract Price: \$ _____
	Authorized Additions: \$ _____	Paid to Date: \$ _____
	Authorized Deductions: \$ _____	Balance Due: \$ _____

3. The undersigned further certifies that in addition to the amount set forth above, there are outstanding and unsettled the following Change Orders:

a. CO# _____	Dated: _____	Amount: \$ _____	c. CO# _____	Dated: _____	Amount: \$ _____
b. CO# _____	Dated: _____	Amount: \$ _____	d. CO# _____	Dated: _____	Amount: \$ _____

4. Subject to satisfactory disposition of items listed in Paragraph 3 above, the undersigned releases Massachusetts Port Authority from all further claims under the contract and further certifies there are no known outstanding claims for wages or payments to subcontractors or suppliers except: \_\_\_\_\_ (list exceptions: insert words "see attached list" or insert "none")

_____	By: _____	_____
Contractor	Authorized Signature - Title	Date

### CERTIFICATE OF ACCEPTANCE

The above-entitled Contract is accepted as of \_\_\_\_\_ subject to the terms and provisions of said Contract.

_____	_____	_____	_____
Resident Engineer	Date	MPA Facility Representative	Date
_____	_____	_____	_____
MPA Project Manager	Date	Deputy Director for Construction and Engineering Services	Date
		_____	_____
		Director of Capital Programs and Logan Modernization	Date

CC: Resident Engineer, Project Manager, MPA Facility Representative, Capital Programs Construction, Project Controls Manager, Risk Management, and Contractor



**SECTION 01730****OPERATION, MAINTENANCE AND WARRANTY MANUALS****PART 1 - GENERAL****1.01 RELATED DIVISIONS & SECTIONS**

- A. Division I - General Requirements and Covenants
- B. Division II - Special Provisions
- C. Division III - Technical Specifications
  - 1. Section 01300 - Submittals
  - 2. Section 01650 - Contract Closeout

**1.02 QUALITY CONTROL**

- A. Preparation of instructions, data and troubleshooting shall be by personnel experienced in maintenance and operations of the described products.

**1.03 FORMAT**

- A. Prepare data in the form of an instructional manual.
- B. Binders: Commercial quality, 8 1/2 x 11 inch three-ring binders with cleanable clear plastic overlays on the cover and spine, hardback with a two inch diameter D-ring size. When multiple binders are used correlate data into related, consistent grouping.
- C. Cover: Identify each binder cover and spine with typed title OPERATION AND MAINTENANCE INSTRUCTIONS, or WARRANTY MANUAL; list the project title, project number, facility, building number, identify the subject matter of contents and volume number.
- D. Arrange content by trades (Architectural, Mechanical and Electrical) and then by systems, under section numbers and sequence of Table of Contents.
- E. Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- F. Text: Manufacturer's original printed data on 20-pound paper. Photocopies will not be accepted.

- G. Drawings: Provide with reinforced punched, binder tab. Bind in with text. Fold larger drawing to size of text pages and insert in a plastic jacket.
- H. Submit manufacturer's certification that the data and drawing have been reviewed by a party other than the preparer and pertain exactly to the model, size, and series of product and equipment installed in the work.
- I. All products, systems, and drawings must be cross-referenced with the I.D. or Tag numbers indicated on the contract drawings or furnished by the Authority.

#### 1.04 CONTENTS, EACH VOLUME

- A. Table of Contents: Provide title of project, project number; names, addresses, telephone numbers, fax numbers and E-mail addresses of the design engineer, sub consultant and contractor with names of responsible parties; schedule of products and systems, indexed to content of volume. A listing of all relevant I.D. or tag numbers for each volume shall be placed immediately behind the table of contents.
- B. For each product or system: List the names, addresses and telephone numbers, fax numbers, E-mail addresses of subcontractors and suppliers, including local source of supplies and replacement parts.
- C. For each product or piece of equipment provide data sheets which include:
  - 1. Project Title:
  - 2. Project Number:
  - 3. Equipment name:
  - 4. I.D. or Tag Number:
  - 5. Make/Model/Serial Number:
  - 6. Location:
  - 7. Manufacturer Information:  
Name/address/phone/fax/E-mail/contact
  - 8. Local Vendor:  
Name/address/phone/fax/E-mail/contact
  - 9. Warrantee data
- D. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- E. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- F. Text: As required to supplement product data. Provide logical sequence of instructions for each procedure including but not limited to check-out, testing, start-up, maintenance, overhauls, repairs, troubleshooting.

## 1.05 MANUAL FOR MATERIALS AND FINISHES

- A. Building products, applied materials and finishes: Include product data with catalog number, size, composition and color, and texture designations. Provide information for re-ordering custom manufactured products. Provide schedule of finishes applied or installed.
- B. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance. This information should be based on the specific conditions, exposure, and usage of the project. The manufacturer shall state that they have review the specific application and the procedures for this project.
- C. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance and repairs based upon the specific conditions, exposure and usage of the project. The manufacturer shall state that they have review the specific application and the procedures for this project.
- D. Schedule: Prepare a schedule of maintenance tasks and inspections for products which require service. The schedule shall include the frequency of service, type of service, estimated man-hours, parts and consumables, tools required and estimated cost of tools and supplies.
- E. Maintenance Task forms: For each identified maintenance task, inspection and repair procedure, a task form shall be completed which provides specific procedures, tools and equipment required, spare parts, consumables, recommended crew size and man-hours to complete the task.
- F. Additional Requirements: As specified in individual product specification sections.

## 1.06 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Each item of equipment and each system: Include description of unit or system, and components parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
- B. Data submitted on all equipment shall include complete maintenance instructions (including preventative and corrective maintenance) and parts lists in sufficient detail to facilitate ordering replacements.
- C. Include color coded wiring diagrams as installed.

- D. Operating procedures: Include start-up, break-in, and routine normal operating instructions and sequence. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any other special operating instructions.
- E. Provide servicing and lubrication schedule, and list lubricants required. Cross-reference lubricants to products offered by at least three major lubricant suppliers.
- F. Include manufacturer's printed operation and maintenance instructions.
- G. Include sequence of operation by controls manufacturer.
- H. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- I. Provide control diagrams by controls manufacturer is installed.
- J. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams, and "as-built" drawings. Diagrams and drawings shall have color coded piping consistent with the Authority's standards.
- K. Provide a list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- L. Include test and balancing reports, calibration data, alignment records, and other field inspection reports associated with check-out and start-up.
- M. Schedule: Prepare a schedule of maintenance tasks and inspections for products which require service. The schedule shall include the frequency of service, type of service, estimated man-hours, parts and consumables, tools required and estimated cost of tools and supplies.
- N. Maintenance Task forms: For each identified maintenance task, inspection and repair procedure, a task form shall be completed which provides specific procedures, tools and equipment required, spare parts, consumables, recommended crew size and man-hours to complete the task.
- O. Additional Requirements: As specified in individual product specification sections.

#### 1.07 MANUAL FOR WARRANTIES, GUARANTEES AND SERVICE AGREEMENTS

- A. Table of Contents: Provide title of project, project number; names, addresses, telephone numbers, fax numbers and E-mail addresses of the design engineer, sub consultant and contractor with names of responsible parties; schedule of products and system components, indexed to content of volume.

- B. For each product, manufacturer or system component: List the name, addresses and telephone numbers, fax numbers, E-mail addresses of manufacturers and suppliers, including local source of supplies and replacement parts. The list shall include the start date and end date of the warranty period.
- C. Provide original warranties with signatures of authorized representatives for each product which provides warranty coverage greater than the base warranty provided by the Contractor.
- D. For systems or components that require a service agreement to be included as part of the technical specifications, provide an executed copy of the agreement. The agreement shall state the services to be provided, furnish the procedures to be followed to request service, and 24-hour emergency contact procedures.

#### 1.08 SUBMITTALS

- A. Submit 3 copies of original quality, marked preliminary draft or proposed formats and outlines of contents to the Engineer prior to assembling the final versions.
- B. Incorporate comments from the preliminary draft submittal as required.
- C. Submit 6 copies of the revised volumes in final format prior to Substantial Completion. The Authority's acceptance of a project as Substantially Complete is conditional on the ability to operate and maintain the equipment in accordance with the approved Operations and Maintenance manuals.

### **PART 2 - PRODUCTS**

Not Used

### **PART 3 - EXECUTION**

Not Used

**END OF SECTION 01730**

## DIVISION OF CAPITAL ASSET MANAGEMENT STANDARD CONTRACTOR EVALUATION FORM

### Section I - General Project Information

<b>Your Name:</b>	<b>Telephone No.:</b>
<b>Position/Title:</b>	<b>Date:</b>
<b>Agency/Firm:</b>	<b>DCAM Interviewer (If any):</b>
<b>Name of Contractor:</b>	<b>Total Contract Cost With Change Orders:</b>
	<b>Contract Start/ End Dates:</b>
<b>Project Title:</b>	<b>Actual Completion Date</b>
<b>Scope of Work:</b>	
<b>Project Location:</b>	

***Important!!***

***Please check (Ö) if this is an Interim Report (50% complete) •  
or a Final Evaluation (at least 99% complete) •***

### Section II - Evaluation Questionnaire

Please rate this contractor's performance in each of the following areas. If you need additional space, attach 8 1/2" x 11" sheets. If you rate the contractor below Satisfactory in any area, you must provide detailed information to explain the rating assigned.

**1. Quality of Workmanship**

*0-28 points (refer to Page 4)*

Rate the quality of this contractor's completed work. Were there quality related or workmanship problems on the contract? If not, provide specific examples.

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**2. Project Management**

*0-13 points (refer to Page 4)*

**a) Scheduling** - Rate this contractor's performance with regard to adhering to contract schedules. Did this contractor meet the contract schedule or the schedule as revised by approved change orders? If not, was the delay attributable to this contractor? If so, provide specific examples.

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*0-13 points (refer to Page 4)*

- (b) **Subcontractor Management** - Rate this contractor's ability, effort and success in managing and coordinating subcontractors (if no subcontractors, rate this contractor's overall project management). Was this contractor able to effectively resolve problems? If not, provide specific examples.

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*0-9 points (refer to Page 4)*

- (c) **Safety and Housekeeping Procedures** - Rate this contractor's safety and housekeeping procedures on this project. Were there any OSHA violations or serious safety accidents? If so, provide specific examples.

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*0-9 points (refer to Page 4)*

- (d) **Change Orders** - Did this contractor unreasonably claim change orders or extras? Was this contractor's price on change order and extras reasonable? If not, provide specific examples.

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*0-7 points (refer to Page 4)*

- (e) **Working Relationships** - Rate this contractor's working relationships with other parties (i.e., owner, designer, subcontractors, etc.). Did this contractor relate to other parties in a professional manner? If not, give specific examples.

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*0-7 points (refer to Page 4)*

- (f) **Paperwork Processing** - Rate this contractor's performance in completing and submitting required project paperwork (i.e., submittals, drawings, requisitions, payrolls, workforce reports, etc.). Did the contractor submit the required paperwork promptly and in proper form? If not, provide specific examples.

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**3. On-Site Supervisory Personnel Rating***0-14 points (refer to Page 4)*

- a) **General Performance** - Rate the general performance of this contractor's on-site supervisory personnel. Did the superintendent(s) have the knowledge, management skills and experience to run a project of this size and scope? If not, provide specific examples.

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**SECTION III - Legal and Administrative Proceedings**

Are you aware of any legal or administrative proceedings, invoked bonds, assessed damages, demands for direct payment, payment bond claims, contract failures, contract terminations, or penalties involving this contractor on this contract? What is the status of any pending litigation? What was the final outcome of any completed litigation? What are the dollar amounts of assessed damages or penalties?

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**SECTION IV - Numerical Rating**

Use the grid on the following page to rate the contractor's performance on this project. In assigning the Numerical Rating, please note the following:

1. You are not restricted to using the numerical values shown and may score in between the numbers shown.
2. A total Numerical Rating of 70 is required for a passing grade.
3. If you rate the contractor below satisfactory in any area, you must provide written comments in Section II to explain the rating(s) assigned.



Contractor's Name:

	Unsatisfactory	Below Average		Average		Above Average		Rating
		Poor	Deficient	Satisfactory (Passing)	Good	Very Good	Excellent	
<b>1. Quality of Work</b>	0	10	16	22	24	26	28	
<b>2. Project Management</b>								
a) Scheduling	0	4	8	10	11	12	13	
b) Subcontractor Management	0	4	8	10	11	12	13	
c) Safety and Housekeeping	0	3	4	6	7	8	9	
d) Change Orders	0	3	4	6	7	8	9	
e) Working Relationships	0	2	3	4	5	6	7	
f) Paperwork Processing	0	2	3	4	5	6	7	
						Subtotal - Item 2		
<b>3. Supervisory Personnel Rating</b>								
General performance	0	2	4	8	10	12	14	
						Subtotal - Item 3		
						Total Numerical Rating		

## Section V - Evaluator Certification

I certify that the information contained in this evaluation form represents, to the best of my knowledge, a true analysis of this contractor's performance record on this contract.

I also certify that I have no ties with this contractor either through a business or family relationship.

I have mailed a copy of this completed evaluation form to the contractor on \_\_\_\_\_  
(A copy of this completed evaluation form **must** be mailed to the contractor.).

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## Section VI - Additional Comments